Journal of THE AMERICAN DIETETIC ASSOCIATION

UNIVERSITY OF MICHIGAN
JUL 22 1952
HOSPITAL LIBRARY

VOL. 28, NO. 7

July 1952

THE LAW BEHIND THE LABEL
Wallace F. Janssen

FEEDING CHILDREN TO MEET THEIR EMOTIONAL NEEDS
Ralph D. Rabinovitch and Joseph Fischhoff

NUTRITION EDUCATION STUDIES
Floy Eugenia Whitehead

DIET AND LONGEVITY
Adelia M. Beeuwkes

IRON NEEDS OF YOUNG WOMEN
Frances A. Johnston and Thelma J. McMillan

YIELD AND QUALITY OF HAMS
Lucy M. Alexander and O. G. Hankins

Dietary Nomenclature

35th A.D.A. Annual Meeting, Minneapolis, October 21–24, 1952

PUBLISHED BY *The American Dietetic Association*

mfb

heavy-duty

the shortening with the high smoke point

A PRODUCT OF

Shortening SHQ Headquarters

WESSON OIL & SNOWDRIFT SALES CO.

NEW YORK • CHICAGO • SAVANNAH • NEW ORLEANS
SAN FRANCISCO • MEMPHIS
• HOUSTON

VOLUME 28
NUMBER 7

Journal OF THE American Dietetic Association

CONTENTS, JULY 1952

THE LAW BEHIND THE LABEL. What Dietitians Should Know about Food Standards and the Food, Drug, and Cosmetic Act—*Wallace F. Janssen* 609

FEEDING CHILDREN TO MEET THEIR EMOTIONAL NEEDS. A Survey of the Psychologic Implications of Eating—*Ralph D. Rabinovitch*, M.D., and *Joseph Fischhoff*, M.D. 614

STUDIES IN NUTRITION EDUCATION—*Floy Eugenia Whitehead*, D.Sc. 622

EARLY SPECULATIONS ON DIET AND LONGEVITY—*Adelia M. Beeuwkes* 628

IRON REQUIREMENT OF SIX YOUNG WOMEN—*Frances A. Johnston*, Ph.D., and *Thelma J. McMillan*, Ph.D. 633

YIELD AND QUALITY OF COOKED EDIBLE PORTION OF SMOKED HAMS—*Lucy M. Alexander* and *O. G. Hankins* 636

CURRENT COMMENT
Dietary Nomenclature—*Corinne H. Robinson* 640

NEW BREAD STANDARDS 646

CURRENT LITERATURE 648

NEWS NOTES 664

The Journal of the American Dietetic Association is published monthly by The American Dietetic Association, Mt. Royal & Guilford Aves., Baltimore 2, Md., and 620 N. Michigan Ave., Chicago 11, Ill. Neither the Association nor the Editor assumes responsibility for the opinions expressed by authors of papers abstracted, quoted, or published in full in this Journal.

Subscriptions: Rate $6 per year in advance in the U. S., Canada, and countries of the Postal Union; all other countries, $7 per year in advance. Special rate to undergraduate students and dietetic interns in approved internships, $2.00 per year in advance, if order is approved by head of the department. Single copies, 75 cents in advance. All correspondence concerning Journal subscriptions, orders for copies or reprints from the Journal, and notices of change of address should be sent to The American Dietetic Association, Mt. Royal & Guilford Aves., Baltimore 2, Md., or preferably 620 N. Michigan Ave., Chicago 11, Ill. Notices regarding change of address should reach the publisher by the *25rd of the month before the date of issue* on which the change is to take effect and both old and new addresses should be given. Claims for Journals lost in the mail will not be entertained more than six months after the date of the issue involved.

Editorial Correspondence: All articles and notices for publication, general correspondence, and inquiries should be sent to the Editor at The American Dietetic Association, 620 N. Michigan Ave., Chicago 11, Ill. Manuscripts are accepted for publication on condition that they are contributed solely to the Journal. Copy must be double-spaced and two copies, an original and one carbon, submitted.

Advertising: All correspondence concerning advertising should be addressed to The American Dietetic Association, 620 N. Michigan Ave., Chicago 11, Ill.

COPYRIGHT, 1952, BY THE AMERICAN DIETETIC ASSOCIATION Printed in U.S.A.
Entered as second-class matter June 30, 1925 at the Post Office at Baltimore, Md. under the act of August 24, 1912
Published monthly by The American Dietetic Association

OFFICERS, 1951-1952 THE AMERICAN DIETETIC ASSOCIATION

Headquarters of the Association: 620 N. Michigan Ave., Chicago 11

Coordinating Cabinet

EXECUTIVE BOARD

President, MARGARET A. OHLSON, Ph.D., Michigan State College, East Lansing
President-Elect, BEULAH HUNZICKER, The Presbyterian Hospital, Chicago
Speaker of the House of Delegates, HELEN L. GILLUM, Ph.D., University of California, Berkeley
Secretary and Chairman, Membership Committee, MARGUERITE L. PETTEE, University of Colorado Medical School, Denver
Treasurer and Chairman, Finance Committee, LEVELLE WOOD, The Ohio State University, Columbus

SECTION CHAIRMEN

Community Nutrition, MARY REEVES, Children's Bureau, Federal Security Agency, 69 West Washington Street, Chicago
Diet Therapy, MRS. CORINNE H. ROBINSON, 90 East Stewart Avenue, Lansdowne, Pa.
Food Administration, MRS. CORA E. KUSNER, Colorado State Hospital, Pueblo
Professional Education, ALICE BIESTER, University of Minnesota, St. Paul

COUNCIL OF THE HOUSE OF DELEGATES

Speaker of the House of Delegates, HELEN L. GILLUM, Ph.D., University of California, Berkley
Speaker-Elect of the House of Delegates, LUCILLE M. REFSHAUGE, Hartford Hospital, Hartford, Conn.
Secretary of the House of Delegates, LOUISE ESCH, Stanford University Hospitals, San Fransisco 1952
E. NEIGE TODHUNTER, Ph.D., University of Alabama, University 1952
MARY M. HARRINGTON, Harper Hospital, Detroit 1952
E. EVELYN SMITH, University of Illinois, Urbana 1952
LIDA A. JAMISON, Chicago Dietetic Supply House, Inc., Chicago 1953
MRS. MARGARET C. BERNARD, 379 Cook Street, Denver 6 ... 1953

DELEGATES-AT-LARGE

HELEN E. WALSH, California Department of Health, San Francisco 1953
A. JUNE BRICKER, Metropolitan Life Insurance Company, New York City 1953
MRS. BESSIE BROOKS WEST, Kansas State College, Manhattan 1954
ELIZABETH PERRY, City Hospital, Cleveland 1954

Headquarters Staff

RUTH M. YAKEL, Executive Secretary
DOROTHY J. BATES, Assistant to Educational Director
MILDRED L. EGEBERG, Advertising and Exhibition Director
MRS. DOROTHY WEBER INYARD, Placement Bureau Director
MABLE MACLACHLAN, Educational Director
MRS. THELMA POLLEN, Public Relations Director
J. HART ROSDAIL, Business Manager
HARRIET E. SANKEY, Managing Editor, JOURNAL
MRS. DOROTHEA F. TURNER, Editor, JOURNAL
CLARA ZEMPEL, Professional Activities Director

ADVISORY BOARD

FRED G. CARTER, M.D., St. Luke's Hospital, Cleveland ... 1952
L. A. MAYNARD, Ph.D., D.Sc., Cornell University, Ithaca, New York 1953
ANTHONY ROURKE, M.D., Stanford University Hospitals, San Francisco 1954

AWARDS, SCHOLARSHIP AND LOAN FUND BOARD

HELEN S. MITCHELL, Ph.D., University of Massachusetts, Amherst 1952

DIETETIC INTERNSHIP BOARD

ALICE BIESTER, University of Minnesota, St. Paul 1952

JOURNAL BOARD

DORIS JOHNSON, Ph.D., University of Wisconsin, Madison. 1952
MIRIAM LOWENBERG, Ph.D., The Pennsylvania State College, State College 1952
MRS. WINTRESS DALBEY MURRAY, Eastman Kodak Company, Rochester, N. Y. 1953
BERDENA ROSENOW, University of Kansas Medical Center, Kansas City 1953
CHARLOTTE M. YOUNG, Ph.D., Cornell University, Ithaca, N. Y. 1953
CALLIE M. COONS, Ph.D., Bureau of Human Nutrition and Home Economics, U. S. Department of Agriculture, Washington, D. C. 1954
ADELIA BEEUWKES, University of Michigan, Ann Arbor ... 1954
MRS. KATHERINE M. JOHNSON, P.O. Box 697, Vancouver, Wash. 1954
MILDRED BONNELL, University Dining Halls, University of Washington, Seattle 1955

PLACEMENT BUREAU BOARD

FRANCES A. SWENSON, Elizabeth Steel Magee Hospital, Pittsburgh 1952
LUCILLE BACKEMEYER, Residence Halls for Women, University of Nebraska, Lincoln 1952
MRS. BEATRICE HUGHES HOFSOMMER, Harding Restaurants, Chicago 1952
JEANNE REID, Charity Hospital of Louisiana, New Orleans. 1953
UNA ROBINSON, Ph.D., Indiana University, Bloomington .. 1953
ALTA B. ATKINSON, Teachers College, Columbia University, New York City 1953
MRS. VERNA A. MCKINLEY, 16 River Dr., Appleton, Wis. .. 1954
MYRTLE VAN HORNE, Michigan Department of Health, Lansing 1954
MRS. HELEN H. ANDERSON, Stanford University Hospitals, San Francisco 1954

INVESTIGATION BOARD

FLORENCE IMLAY, Kentucky Agricultural Experiment Station, Lexington 1952
THELMA PORTER, Ph.D., The University of Chicago, Chicago 1953

COMMITTEE CHAIRMEN

Civil Defense, LILLIAN S. COOVER, Ph.D., 2121 Hughes Ave., Ames, Iowa
Constitution, MRS. ALICE SMITH, Michigan Department of Health, Lansing
Convention, MRS. WINIFRED H. ERICKSON, Ancker Hospital, St. Paul; MRS. ELEANOR G. WILSON, 43 Inner Drive, St. Paul; and RUTH NICKEL, St. Marys Hospital, Rochester
Dietetic Mobilization Committee for National Security, MABLE MACLACHLAN, The American Dietetic Association, Chicago
Educational Exhibits, FRANCES M. STENGE, Norwegian-American Hospital, Chicago
History of A.D.A., MRS. ANNA BOLLER BEACH, National Live Stock and Meat Board, Chicago
History of Nutrition and Dietetics, E. NEIGE TODHUNTER, Ph.D., University of Alabama, University
Legislative Information, RUTH SPENCER, Veterans Administration, Washington, D. C.
Library, ELIZABETH H. TUFT, Wesley Memorial Hospital, Chicago
Nominating, HELEN E. WALSH, California Department of Public Health, San Francisco
Program Planning, LILLIAN S. COOVER, Ph.D., 2121 Hughes Ave., Ames, Iowa
Public Relations, MRS. LILLIAN O. FRIED, Ann Emery Hall, Madison, Wis.
Vocational Guidance, MRS. LIANA C. MACLACHLAN, 509 West St. Charles Rd., Elmhurst, Ill.

PRESIDENTS OF STATE DIETETIC ASSOCIATIONS AFFILIATED WITH THE AMERICAN DIETETIC ASSOCIATION

ALABAMA: Mrs. Virginia C. Ritchie, Alabama Polytechnic Institute, Auburn
ARIZONA: Norma Sayre, 4126 E. Glenrosa, Phoenix
ARKANSAS: Mrs. Christina D. Spear, 1816 N. Jackson, Little Rock
CALIFORNIA: Mrs. Margaret C. Warde, Alameda Hospital, Alameda
COLORADO: Inez M. Stocking, 1155 Cherry St., Denver 20
CONNECTICUT: Mary E. Latimer, The Hospital of St. Raphael, New Haven 11
DELAWARE: Marion E. Fisher, VA Hospital, Wilmington
DISTRICT OF COLUMBIA: Gladys L. Stoddart, 2420-16th St., N. W., The Diplomat #815, Washington 9
FLORIDA: Mrs. Vera W. Walker, 1705 Seminole Rd., Jacksonville 5
GEORGIA: Priscilla G. Reynolds, Grady Memorial Hospital, Atlanta 3
IDAHO: Viola Fisher, Idaho Department of Health, Boise
ILLINOIS: Wilma F. Robinson, Illinois Department of Public Health, Springfield
INDIANA: Fern Brown, Reid Memorial Hospital, Richmond
IOWA: Marjorie McKinley, Iowa State College, Ames
KANSAS: Abby L. Mariatt, Ph.D., Kansas State College, Manhattan
KENTUCKY: Mildred E. Neff, Kentucky Board of Health, Louisville 2
LOUISIANA: Jasper Beaird, Oschner Clinic, New Orleans
MAINE: Mrs. Caroline Y. Lovejoy, Bangor Hydro-Electric Company, Bangor
MARYLAND: Eleanor L. McKnight, Baltimore City Health Department, Baltimore 3
MASSACHUSETTS: Geneva L. Marble, Boston Lying-In Hospital, Boston
MICHIGAN: Edna M. McIntosh, Gerber Products Company, Fremont
MINNESOTA: Mrs. Eleanor G. Wilson, 43 Inner Dr., St. Paul 5
MISSISSIPPI: Mrs. Janette Z. Habas, 604 Orleans, Natchez
MISSOURI: Jessie A. Cline. 707 Missouri Ave , Columbia
MONTANA: Mrs. Virginia T. Hendrickson, Montana State College, Bozeman
NEBRASKA: Doretta Schlaphoff, Ph.D., University of Nebraska, Lincoln 1
NEVADA: Ruth M. Reed, Washoe Medical Center, Reno
NEW HAMPSHIRE: Sarah Thames, University of New Hampshire, Durham
NEW JERSEY: Janet N. Jardine, New Jersey Department of Education, Trenton
NEW MEXICO: Mrs. Margaret W. Geders, 309 North Edith, Apt. 1, Albuquerque
NEW YORK: Elizabeth Henry, 2 Atkinson St., Rochester 8
NORTH CAROLINA: Evelyn Cox, Women's College, University of North Carolina, Greensboro
NORTH DAKOTA: Elvira T. Smith, North Dakota Agricultural College, Fargo
OHIO: Mrs. Frances V. Krone, Cincinnati General Hospital, Cincinnati 29
OKLAHOMA: Martha A. Russell, 1312 North Frances, Oklahoma City
OREGON: Mrs. Buena P. Council, Good Samaritan Hospital, Portland 10
PENNSYLVANIA: Sophia M. Podgorski, 156 Sheridan St., Wilkes-Barre
RHODE ISLAND: Mary K. Behlen, VA Hospital, Davis Park, Providence 8
SOUTH CAROLINA: Mrs. Frances E. Poston, 114 Savannah Hwy., Moreland, Charleston
SOUTH DAKOTA: Lida M. Burrill, Ph.D., Box 25, College Station, Brookings
TENNESSEE: Annie L. Galbraith, East Tennessee Baptist Hospital, Knoxville 10
TEXAS: Loie L. Davis, 3410 Haynie, Dallas 5
UTAH: Lois Luchsinger, 184 - 4th Ave., Salt Lake City
VERMONT: Mrs. Alice S. Roberteon, Spear St., Burlington
VIRGINIA: Elizabeth A. Lounds, Medical College of Virginia, Richmond 19
WASHINGTON: Juanita I. Kahler, The State College of Washington, Pullman
WEST VIRGINIA: Elizabeth A. Anderson, St. Luke's Hospital, Bluefield
WISCONSIN: Ruth A. Humboldt, 1838 North 75th St., Wauwatosa 13
HAWAII: Mrs. Elsie Boatman, University of Hawaii, Honolulu 14

The Law Behind the Label

What Dietitians Should Know about Food Standards and the Food, Drug, and Cosmetic Act

WALLACE F. JANSSEN

Assistant to the Commissioner, Food and Drug Administration, Federal Security Agency, Washington, D. C.

ONE day last October I dropped in at the New York district laboratories of the Food and Drug Administration.

"We're up to our ears in figs," said District Chief Charles A. Herrmann, when I asked "What's doing?" The Mediterranean fig crop was coming to port, and tons of samples were being examined for insect infestation. Every analyst in New York, and some from other districts, was busy with a knife, slitting the skins of the light brown figs and examining the seedy pulp with a magnifying glass to see if larvae were present. Wormy shipments were being detained for re-export—only the good were allowed to leave the docks and come into the country.

"Fig cutting" is an annual chore at New York and several other port cities where the Food and Drug Administration has district headquarters. It's just one of the thousand and one jobs done by the FDA to insure the integrity of the nation's food supply. There are sixteen of these District offices, manned by laboratory scientists and by inspectors who work in the field, visiting plants, warehouses, and stores in a ceaseless watch for products that are substandard, filthy, fraudulent, harmful, or deceptively packaged or labeled.

In Washington are the national headquarters and research laboratories where basic studies are made to evaluate products and new methods are devised for testing them to determine whether they meet the requirements of the federal law. When products do not measure up to these requirements, legal actions are started. With the evidence supplied by the inspectors and scientists, the government lawyers prepare the necessary legal papers which are turned over to the U. S. District Attorneys in every state for trial in the federal courts.

A variety of legal remedies is available. The offending products may be seized and destroyed by court order if they are unfit to be reconditioned. Those responsible for the shipment of the illegal goods may be prosecuted, or court orders may be sought to enjoin them from shipping such products. In a case of persistent violation, the court may even order the offender to go out of business—or go to jail, or both. It isn't necessary to prove that foods are actually contaminated—a court can stop interstate shipments from a plant where filthy conditions *may* result in contamination. But it is the FDA men who must obtain the evidence, whether by factory inspections or laboratory analysis, or both.

Consumers, lay and professional, need to know more about the laws and the enforcement machinery which protect America's food. Dietitians have a very special interest in these laws which safeguard the purity, quality, nutritive value, and correct labeling of the materials which they use and rely upon in their everyday work. Particularly, they have an interest in food standards established under the federal law. Such standards fix the real values of food products and may be considered as important safeguards of the American standard of living.

How can the dietitian best take advantage of the laws which Congress has passed for consumer protection? There are several ways. The first is to find out something about how these laws work and what they require of food suppliers and of the products which they deliver to your storeroom or kitchen.

FDA microanalyst examining figs for insect infestation

FOOD, DRUG, AND COSMETIC ACT

The most important of these consumer protective laws is the federal Food, Drug, and Cosmetic Act, passed in 1938, popularly known as the "pure food and drug law." It is enforced by the Food and Drug Administration, once a part of the Department of Agriculture but now an arm of the Federal Security Agency.

This law is a highly technical statute, but its fundamentals are simple. One way it operates is through the medium of a truthful label. The label must tell what is in the package. It must not be false or misleading in any particular. The courts have gone a long way in construing this requirement. Labels which are literally true have been held to be misleading because of what they omitted to tell the buyer or because the product was not what the consumer expected when she called for it by its common and usual name.

Products with false labeling are "misbranded," and the law prohibits the shipment of misbranded products in interstate commerce.

The law also prohibits the shipment of "adulterated" products. The presence of any harmful substance, spoilage, or filth constitutes adulteration and is prohibited. Adulteration also includes all kinds of cheating in the composition of the food, such as excess water or other ingredients added to cheapen the product or make it appear better or of greater value than it really is. The removal of a valuable constituent which is ordinarily present is another form of adulteration.

DEFINITIONS AND STANDARDS

From the dietitian's standpoint, one of the most interesting and important provisions of the federal Food, Drug, and Cosmetic Act is Sec. 401 which requires the establishment of definitions and standards for foods whenever, in the judgment of the Administrator, such action will "*promote honesty and fair dealing in the interest of consumers.*"

Three kinds of standards may be established: (a) standards of identity, (b) standards of quality, and (c) standards of fill of container. Specifically exempted are most fresh and dried fruits and vegetables.

STANDARDS OF IDENTITY

Most of the standards written to date are *standards of identity*. This kind of standard is designed to establish what a given food product is—in other words, what the consumer expects to receive when she asks for the food by its common or usual name. For example, the standard of identity for fruit preserves and jellies requires not less than 45 parts of fruit or fruit juice to each 55 parts of sugar ingredient. This ratio was established on the basis of a long record of consumer understanding and trade practices in making these products. At the public hearings which preceded the formulation of this standard, cook books two hundred years old as well as current ones were introduced in evidence to show that pure jam is a product made from approximately equal parts of fruit and sugar.

The standards of identity for fruit preserves, jellies, and fruit butters have virtually eliminated from the market the type of product which used to masquerade as preserves under such names as "grape smash" or "raspberry spread." Such products, formerly sold in huge quantity, were made from a little fruit and much water, pectin, sugar, artificial coloring and sometimes artificial flavoring, and a few grass seeds to create the illusion of a fruit product. For a time it appeared that all such products were outlawed, but a recent Supreme Court decision (March 26, 1951) held that substandard (low-fruit) jams are legal if clearly labeled "imitation." Leaders of the preserve industry have expressed apprehension that this may open the door to a host of cheap "imitation" products which would have the effect of nullifying standards, at least in respect to those foods which reach the public via restaurants and institutions, where the consumer does not see the label.

STANDARDS OF QUALITY

Standards of quality have been set for a number of leading varieties of canned fruits and vegetables. These are minimum standards and establish specifications for such quality factors as tenderness, color, and freedom from defects. Under these standards, if a food does not meet the quality specifications, it must be labeled "Below Standard in Quality," followed by a statement showing in what respect the

FDA analyst testing quality of canned pears

product fails to meet the standard, such as "excessively broken," or "excessive peel," and so on. Maintaining quality standards includes the use of tests to determine whether a product meets the official requirements.

All standards of quality to date have been written as adjuncts to standards of identity; in other words, the standard of identity defines what the product is, and the standard of quality provides for special labeling for the particular product which is not up to the usual expectations of the consumer but is nevertheless a wholesome food.

Large quantities of substandard canned fruits and vegetables are sold to institutions at economical prices and are entirely satisfactory for many purposes, particularly in prepared dishes where the original appearance or texture of the food is lost, whatever quality is used. The labeling provides information which is helpful to the dietitian in deciding whether a below-standard food may be used without loss of nutritional values or appetite appeal.

STANDARDS OF FILL OF CONTAINER

Standards of fill of container are just what the name implies—they tell the packer how full the container must be to avoid deception of the consumer and a prosecution for "slack-filling." They are particularly necessary for products that may shake down or settle after filling or which are comprised of a number of units or pieces packed in a liquid. Such standards have been formally established for some canned fruits and vegetables, tomato products, and shellfish. Similar standards of fill have been established informally for many other foods, for instance, for spices, olives, and pickles. For the packer, they answer the question of what is good manufacturing practice, i.e., what is practical within the limitations of packing machinery and the peculiarities of the product. For the consumer, they put an end to a kind of cheating that formerly was much more common than it is today.

FDA analyst measuring fill of container in canned corn

In general, manufacturers are not required to state the ingredients on the labels for *standard* foods —the standards guarantee what they contain and how much. However, when it is considered essential to honesty and fair dealing to inform consumers of the presence of some "optional" ingredient in the food (such as the type of sirup in canned fruits), the FDA Administrator may require such an ingredient to be declared on the label. "Preservatives" invariably are declared on both standardized and non-standardized foods as required by the law itself. Non-standardized foods must, of course, bear the common or usual names of all ingredients on their labels, in the order of predominance by weight, but there is no general requirement in the law for labeling the *quantities* of ingredients in foods.

BASES FOR STANDARDS

Food standards are based on factual data recorded at public hearings. The testimony, mainly given by trade experts, may run to thousands of pages. For example, the record on the hearings for bread standards runs over 17,000 pages and constitutes a virtual encyclopedia of knowledge on the art and science of baking. The text of a food standard summarizes this valuable information in the form of manufacturing and labeling specifications.

Food standards are a storehouse of product information. They tell what is in the food and a great deal about how it is made. They also tell how it is labeled. Obviously, this kind of information is of particular interest to the dietitian who is responsible for the purchasing and preparation of large quantities of food, as well as to the homemaker.

An entire article could be written about each of the food standards, explaining the significance of its requirements from the consumer's standpoint (in fact, books could be written about some of them). Interpretative material of this kind does not now exist. It is needed, for the text of the standards is too technical for easy reading by housewives or students. Dietitians, however, may find it well worthwhile to write to the Food and Drug Administration, Washington 25, D. C., asking for a copy of FDC-2, "Definitions and Standards for Foods." Larger quantities of this publication may be obtained from the Government Printing Office, Washington 25, D. C., for 30 cents per copy. The foods which have been standardized to date are listed in the appendix of this article on page 612. At the end of the list is a separate tabulation of food standards which are pending as this is being written.

STANDARDS FOR ENRICHED PRODUCTS

Ordinarily food standards are thought of as a device for protecting the pocketbook of the consumer. Cheddar cheese must contain at least 50

per cent milk fat (moisture-free basis) and not more than 39 per cent moisture. Such maximum moisture and minimum fat requirements insure the consumer against paying cheese prices for excess water.

But standards also insure that a food has the *nutritional* value that it is expected to have. The standards for enriched flour, corn meal, farina, macaroni products, oleomargarine, and evaporated milk are instances where the standard-making authority works toward an important nutritional objective. However, the basic purpose of the standards is not the nutritional improvement of these or any other foods, desirable as that might seem, but rather the prevention of the confusion by consumers that would arise if each competing manufacturer were to claim that his particular food was enriched in some special and superior way. In line with the Congressional mandate to "promote honesty and fair dealing," the standards set up specifications that guarantee *uniformity* of enrichment. The standards for these enriched foods also insure that the amount of enrichment is substantial—not just a trifling addition put in solely for advertising purposes.

Recognizing in effect that enrichment of certain foods is nutritionally worth while, the standards for these foods establish a yardstick of common practice that all must meet. Such a yardstick is essential for law enforcement purposes. If "enriched" flour or meal does not contain the specified proportions of thiamine, riboflavin, niacin, and iron, or if margarine does not contain the required amount of vitamin A, regulatory action is in order.

LABELING

It will be seen that under the federal Food, Drug, and Cosmetic Act there is a very important relationship between food standards and food labeling. The law requires the *labeling* to be truthful in what it says about the product; on the other hand, food *standards* require the food to be what the label says it is, namely the article that the consumer expects to receive when she calls for it by its common or usual name.

Because the label is such an important factor in consumer protection under the federal Food, Drug, and Cosmetic Law, the Food and Drug Administration has issued a new publication called "Read the Label." This booklet, sold by the Government Printing Office for 15 cents per copy, summarizes the various labeling requirements of the Act from the consumer's standpoint.

Perhaps it is superfluous to say that dietitians should make it a practice to read labels, but it is a fact that this is the best way to take full advantage of the protection given by the federal Food, Drug, and Cosmetic Act.

The Food and Drug Administration is eager to establish a community of interest with the members of the dietetic profession. Dietitians can benefit from knowledge of the federal act and regulations; the Administration can benefit from the advice which dietitians can give in their role of informed consumers. Such advice should be available in the form of testimony at food standards hearings to show what consumers expect in foods and what factors they consider most important.

Similarly, advice of dietitians may be helpful in determining what information consumers most need in the labeling of foods. Their advice may also help in determining whether some particular form of labeling is so inadequate or misleading to consumers as to constitute a probable violation of law. The views of consumers also have a bearing in determining where emphasis should be placed in enforcement operations.

With such ideas in mind, the Food and Drug Administration is giving thought to the employment of a number of part-time consumer consultants in different parts of the country to assist in developing consumer relations designed to further the objectives of the law in the interest of consumers.

FOODS FOR WHICH STANDARDS HAVE BEEN ESTABLISHED UNDER THE FEDERAL FOOD, DRUG, AND COSMETIC ACT (Compiled May 19, 1952)

In many instances, more than one common or usual name is specified for a given food. In this listing, most alternative names have been omitted.

The Food and Drug Administration also enforces the Tea Importation Act, which established standards for all teas imported into the United States.

Unless otherwise indicated, standards are for identity only. Letters "Q" and/or "F" indicate that standards of quality and fill of container have also been established.

Readers who are interested may obtain complete descriptions of any of these standards from the FDA. In each case, the number (preceding the name of the food group) should be included.

Part 14—Cacao Products

- Cocoa nibs
- Bitter chocolate
- Breakfast cocoa
- Medium fat cocoa
- Low-fat cocoa
- Sweet chocolate
- Milk chocolate
- Skim milk chocolate
- Buttermilk chocolate
- Mixed dairy product chocolate coatings
- Sweet chocolate and vegetable fat (other than cacao fat) coating
- Sweet cocoa and vegetable fat (other than cacao fat) coating

Part 15—Cereal Flours and Related Products

- Wheat flour
- Enriched flour
- Bromated flour
- Enriched bromated flour
- Durum flour
- Self-rising flour
- Enriched self-rising flour
- Phosphated flour
- Whole wheat flour, Graham flour
- Bromated whole wheat flour
- Whole durum wheat flour
- Crushed wheat
- Cracked wheat
- Farina
- Enriched farina
- Semolina
- White corn meal
- Yellow corn meal
- Bolted white corn meal
- Bolted yellow corn meal
- Degerminated white corn meal
- Degerminated yellow corn meal
- Self-rising white corn meal
- Self-rising yellow corn meal
- White corn flour
- Yellow corn flour
- Grits, hominy grits
- Yellow grits, yellow hominy grits
- Quick cooking grits
- Enriched corn meals
- Enriched corn grits

Part 16—Alimentary Pastes

- Macaroni products
- Milk macaroni products
- Whole wheat macaroni products
- Wheat and soy macaroni products
- Vegetable macaroni products

Noodle products
Wheat and soy noodle products
Vegetable noodle products
Enriched macaroni products
Enriched noodle products

Part 17—Bakery Products—Bread and Rolls

White bread
Enriched bread
Milk bread
Raisin bread
Whole wheat bread, Graham bread

Part 18—Milk and Cream

Non-Fat Dry Milk Solids[1]

Butter[1]

Cream class of food
Light cream, coffee cream
Whipping cream class of food
Light whipping cream
Heavy whipping cream
Evaporated milk
Concentrated milk, plain condensed milk
Sweetened condensed milk
Condensed milks which contain corn sirup
Dried skim milk

Part 19—Cheeses; Processed Cheeses; Cheese Foods; Cheese Spreads and Related Foods

Cheddar cheese, cheese
Cheddar cheese for manufacturing
Washed curd cheese
Washed curd cheese for manufacturing
Colby cheese
Colby cheese for manufacturing
Cream cheese
Neufchatel cheese
Cottage cheese
Creamed cottage cheese
Granular cheese
Granular cheese for manufacturing
Swiss cheese, emmentaler cheese
Swiss cheese for manufacturing
Gruyere cheese
Brick cheese
Brick cheese for manufacturing
Muenster cheese, munster cheese
Edam cheese
Gouda cheese
Blue cheese
Hard cheeses
Semisoft cheeses
Semisoft part-skim cheeses
Soft ripened cheeses
Spiced cheeses
Part-skim spiced cheeses
Hard grating cheeses
Skim-milk cheese for manufacturing
Pasteurized process cheese
Pasteurized blended cheese
Pasteurized process cheese with fruits, vegetables, or meats
Pasteurized process pimento cheese
Pasteurized blended cheese with fruits, vegetables, or meats
Pasteurized process cheese food
Pasteurized process cheese food with fruits, vegetables, or meats
Gorgonzola cheese
Roquefort cheese, blue-mold cheese from sheep's milk
Limburger cheese
Monterey cheese
High-moisture jack cheese
Provolone cheese, pasta filate cheese
Caciocavallo siciliano cheese
Parmesan cheese, reggiano cheese
Romano cheese
Asiago fresh cheese, asiago soft cheese
Asiago medium cheese
Asiago old cheese
Cook cheese, koch kaese
Sap sago cheese
Gammelost cheese
Pasteurized process cheese spread
Pasteurized cheese spread
Pasteurized process cheese spread with fruits, vegetables, or meats
Pasteurized cheese spread with fruits, vegetables, or meats
Cream cheese with other foods
Pasteurized neufchatel cheese spread with (and) other foods
Cold-pack cheese, club cheese
Cold-pack cheese food
Cold-pack cheese food with fruits, vegetables, or meats

Part 27—Dressings for Foods

Mayonnaise
French dressing
Salad dressing

Part 27—Canned Fruits

Peaches (Q and F)
Peaches with rum
Apricots (Q and F)
Apricots with rum
Pears (Q and F)
Pears with rum
Cherries (Q and F)
Cherries with rum
Fruit cocktail (Q and F)

Part 29—Fruit Preserves and Jellies

Preserves, jams
Fruit jelly
Fruit butter

Part 36—Shellfish

Canned wet pack shrimp and canned dry pack shrimp in nontransparent containers (F only)
Canned oysters (F)
Oysters, raw oysters, shucked oysters
Extra large oysters, oysters counts (or plants)
Large oysters, oysters extra selects
Medium oysters, oysters selects
Small oysters, oysters standards
Very small oysters
Olympia oysters
Pacific oysters, size 5 to 8 per pint
Pacific oysters, size 8 to 10 per pint
Pacific oysters, size 10 to 12 per pint
Pacific oysters, size 12 to 15 per pint
Pacific oysters, size 15 to 18 per pint
Pacific oysters, size over 18 per pint

Part 42—Eggs and Egg Products

Eggs
Liquid egg yolks
Liquid eggs, liquid whole eggs
Frozen eggs, frozen whole eggs
Dried eggs, dried whole eggs
Frozen egg yolks
Dried egg yolks

Part 45—Oleomargarine

Part 51—Canned Vegetables

Peas (Q and F)
Green beans (Q)
Wax beans (Q)
Sweet corn (Q and F)
Field corn (F)

Part 52—Canned Vegetables (other than those specifically regulated)

Artichokes
Asparagus
Bean sprouts
Shelled beans
Lima beans or butter beans
Beets
Beet greens
Broccoli
Brussels sprouts
Cabbage
Carrots
Cauliflower
Celery
Collards
Dandelion greens
Kale
Mushrooms[2]
Mustard greens
Okra
Onions
Parsnips
Black-eye peas or black-eyed peas
Field peas
Green sweet peppers
Red sweet peppers
Pimientos or pimentos
Potatoes
Sweet potatoes
Rutabagas
Salsify
Spinach
Swiss chard
Truffles
Turnip greens
Turnips

Part 53—Tomato Products

Tomato juice
Yellow tomato juice
Canned tomatoes (Q and F)
Catsup, ketchup
Tomato purée, tomato pulp
Tomato paste

PENDING FOOD STANDARDS

Part 20—Ice Cream and Frozen Desserts: A hearing is in progress to establish identity standards for: ice cream, frozen custard, sherbet, water ices, and related foods.

Canned Pineapple and Pineapple Juice (no part number assigned): A hearing has been held and a tentative order has not yet been issued for identity, quality, and fill of container standards.

Part 32—Frozen Fruit: Proposed identity and fill of container standards have been published in tentative form for frozen fruit in bulk containers and for frozen fruit in household size containers.

[1] Statutory standards established by acts of Congress.

[2] Now under consideration for establishment of fill of container standard.

Plan Now for Alumnae Meals at Annual Meeting

The Alumnae Meals Committee welcomes the opportunity to make arrangements for mealtime reunions of college alumnae, dietetic interns, professional sororities, and other groups. Since facilities are limited, the Committee urges that plans be made *immediately* so that reservations may be confirmed. The name of the group and its chairman and the approximate number expected should be sent as soon as possible to Adeline V. Paulson, 2136 Ann Arbor, St. Paul 4, Minn.

Pertinent information concerning reunions:

Tuesday, October 21:	Dinner—College alumnae	About $3.25
Wednesday, October 22:	Breakfast—Dietetic internships	About $1.75
Thursday, October 23:	Dinner—College alumnae and special groups	About $3.25
Friday, October 24:	Breakfast—Dietetic internships	About $1.75

A list of the various group functions, with information as to date, time, and place will be given to each member on registration. Tickets for these and other functions may be purchased at that time.

Feeding Children to Meet Their Emotional Needs

A Survey of the Psychologic Implications of Eating[1]

RALPH D. RABINOVITCH, M.D., and JOSEPH FISCHHOFF, M.D.

Neuropsychiatric Institute, University of Michigan, Ann Arbor

THE relationship of eating and emotions has long been recognized, and there are a good many established and now well-known facts concerning the emotional aspects of nutrition. Eating, representing a primary life-sustaining function, basic from birth on, naturally takes on particular meanings for individuals as relationships and cultural pressures impinge upon the function. In this paper we should like to review some of the psychologic and cultural implications for feeding in childhood with illustrations from case material. In recent years especially, there have been many significant research studies in this area, and we shall refer to these throughout the paper. It is difficult to cover so broad a field in so limited a space, but at the risk of overcondensation, we shall try to survey the many aspects of the problem that present themselves to the child psychiatrist in his clinical practice. Stressing what would seem to be of particular import to the dietitian, we shall refer to the findings of developmental psychology; recent research in the emotional aspects of infancy; the role of cultural pressures, the correlation between eating habits and relationships in the home, specific feeding problems in the hospital setting, some common illnesses in the etiology or treatment of which food plays a primary role, and finally the more specialized field of the therapeutic potentials of feeding in the psychiatric treatment of disturbed children.

DEVELOPMENTAL DATA

In large measure through the work of Gesell (1) and his group at Yale University and Olson (2) at the University of Michigan, we now recognize the importance of understanding individual differences in the growth rates of children, and the general problem of maturation in all spheres. To handle children insightfully we must know what to expect in terms of their age norms and their developmental level. Each age brings with it peculiar problems and modes of reaction as children grow both physically and psychologically. Of course, generalizations must not be overdone. Any of you who have spent time in Central Park in New York have probably observed mothers watching their children with one eye and reading a developmental manual with the other. Some of these mothers, constantly checking their child's performance against the expected norm and the performance of other children, lose perspective as to the real meaning of developmental psychology. Rather than stressing conformity, it has taught us to underscore individual differences and to extend the range of normal. In relation to food habits, norms are very flexible and at best only approximations, but they do provide us with a valuable point of orientation.

Gesell and Ilg (3, 4), Olson (2), and others, have reported extensive investigations into growth gradients as they relate to eating. For example, it is noted that consistency in the method of feeding is vital early in the first year; the infant adapts early to a set routine and finds it difficult to shift. If the style of nipple is changed in the first few months, the baby may refuse the bottle. Somewhere between two and four months, solid foods are added to the baby's diet, but there can be no rigid pattern here. Babies differ a great deal in their capacity to handle new foods, and many difficult situations have been created by a rigid adherence to a preconceived dietary schedule. There is no set time for the introduction of orange juice or solid food, and one is always wiser to respect the infant's developmental pace and to allow him to set the pattern.

Recognition of other later trends may preclude further problems. In the second half of the first year, Johnny will begin to mess with food, to feel its texture and consistency, to finger-feed himself as he

[1] Presented at the 34th Annual Meeting of The American Dietetic Association in Cleveland, on October 11, 1951.

recognizes his growing dexterity. Such experimentation, often difficult for the cleanliness-and-germ-conscious mother is essential for the child as he learns to relate to food by messing, smelling, and pouring. That a high degree of parental fortitude is necessary to allow for these developmental realities goes without saying.

At eighteen months, Johnny may begin to show a decrease in appetite that continues through the second and third years. Referring to this trend, Watson and Lowrey (5) tell us that "the rapid growth which characterized infancy is over. The rate of weight gain reaches its lowest point during this time and the relative metabolic rate is also at a low level." Accompanying the decrease and fluctuation in appetite, there may be an increase in fussiness. In this period Johnny begins to express his likes and dislikes, and often there is no room for doubt as to the meaning of his choice verbalizations. Distinct preferences develop, and while the mother may be disturbed that two-year-old Johnny does not appreciate her cooking, Johnny, in his secret life, may be objecting to all red food or round food or soft food, in that color, form, and consistency are vital issues at this age. Ritualism is common at the age of two, with the child demanding repetition of foods and particular arrangements of dishes. Bobby at this age had a tantrum at his first dinner party because raisin bread was served; he refused it, because the raisins were dirty, and in ritualistic manner, he picked out each raisin and then proceeded happily to eat the clean bread.

In the third year Johnny may enter a period of food jags. He may demand prune whip or mashed eggplant and only these distortions of the culinary art for days on end. If perchance his mother has a particular aversion to prune whip or mashed eggplant, trouble may be in store. But along comes her knowledge of developmental psychology to the rescue. So it goes with food jags, food strikes, and food personalizing interspersed with creative experimentation in the principles of fluid physics. The child's tendency to personalize foods was brought to our attention recently by a distraught mother who was concerned because Steve, age four years, was getting out of hand at mealtime. His most recent disturbance related to canned peaches, his favorite food. He cried bitterly when the peaches were served, screaming, "Take away these weak peaches." No amount of reassurance would comfort him. The peaches were a little less firm than usual, and Steve, much preoccupied with his own problems of strength and weakness, displaced the problem to the fruit. The mother found an ingenious solution; subsequently she served only strong peaches.

At five, Johnny is coming under the influence of social pressures so that he observes what others eat and tends to be easily influenced by the group pattern. As in the earlier years, plain foods are still preferred; casseroles and puddings are particularly in disrepute. His appetite is often large at six, and he is described as a wonderful eater, although he may eat more between meals than at meals. Gesell and Ilg (3) provide a graphic description of his table manners at this age: "He spills, stuffs his mouth, chews with his mouth open. He grabs for food, knocks things over, teeters in the chair, kicks table legs and criticizes the behavior of others." But despite all the problems, Johnny through these years can be helpful, wanting to assist with the cooking, set the table, and join in mealtime conversation. If the atmosphere is comfortable, for the most part he will enjoy his meals with the family. Parents, sustained by the developmental knowledge that he will some day be civilized, can enjoy his presence, too.

EMOTIONAL CLIMATE IN INFANCY

Probably the most significant psychiatric findings of the past decade have dealt with the emotional aspects of infancy, and further investigation in this area holds the greatest promise for our field. Because of the primacy of feeding to the infant, problems of infant feeding have received special attention. That mothering is vital to the infant has always been known—just how vital in terms of all aspects of his development has, in recent years, been clearly demonstrated in a kind of ablation experiment. We have been studying children raised for their first two or three years in sterile institutions as devoid of contact with mother persons as they have been with bacteria. Spitz (6) provides a graphic description of these infants in his studies of hospitalism. Denied the opportunity to establish a relationship with a mother or mother substitute in their first years, these children have later shown an inability to relate meaningfully with people or to integrate social standards. They are empty and affectionless and devoid of that capacity for identification that makes us a part of the group in which we function (7). These children present perhaps the most pathetic group with which we must deal in our clinics, and they are extremely difficult to treat. The disorder is preventable, however, and the implications for social planning for neglected or abandoned infants are clear. The necessity is for placement as close as possible to the time of birth in a foster home where the child can experience affectionate mothering.

If we require research evidence as to the need for mothering in infancy, we find it in our studies of these neglected infants. But what kind of mothering is optimal? In a brilliant paper that has wide general application, Benedek (8) points out the manner in which the infant establishes a sense of confidence through the meeting of his needs by the mother: "Through the rhythmic repetition of the gratification of its physiologic needs the infant develops to the perception that the source of the need is within and the source of gratification is outside the self." The

transition from the total protection of intrauterine life must be very gradual following birth, and every effort must be made to preserve the unity of mother and infant. What does this mean in terms of infant feeding? It implies maximal gratification, feeding the baby at his own rhythm on demand. The relative value of breast and bottle feeding is often raised. There is little definitive evidence of the frank nutritive superiority of nursing as compared with formula feeding, but it is evident that nursing brings the child closer to the mother and is probably of as much value in terms of self-realization for the mother as it is for the infant. One of the problems of our culture is found in the large number of women today who would like to nurse their babies but cannot. There is an interesting and vital area for research here, and while it has more direct reference to the interests of the pediatrician than to dietitians, it does have meaning for you in terms of the larger background of your work.

Regarding the general area of infant care, we can note a tendency in the recent past to overmechanize and perhaps overprofessionalize the process and in so doing to impede the mother's spontaneity in relation to her baby. This is a very serious indictment of our role as physicians, but the trend today is definitely in the direction of simplifying the processes of infant care and in so doing encouraging more spontaneity in mothers. The results of such a trend should prove very healthy for our culture. We have stressed this infancy period at some length, because clinical evidence points to the fact that first or primary experiences have a major influence on later attitudes; in no area is this more true than in relation to feeding.

CULTURAL PRESSURES

As in every aspect of the child's adaptation, cultural pressures play their part in determining eating habits and attitudes to food. Economic status, ethnic group, city or farm background are significant factors. For example, in the study of food choices of Nebraska children, Leverton and Coggs (9) found that more town children than farm children checked foods "unwilling to eat" and that more farm children checked foods as "never tasted," showing the influence of availability and exposure in determining food choices. These factors complicate the dietitian's work in hospitals and institutions. But the cultural pressures go deeper than this, exerting subtle influences on attitudes and behavior.

Because food is so involved with relationships, a moral issue unconsciously tends to surround the question of food habits. Mead (10) states the problem in these words: "If you eat enough of the food that is not good but is good for you, you are then permitted to eat a little of the food that is good but is not good for you." You may know the story of Jimmy who was sent by his mother to buy Lima beans; he returned quite elated chewing vigorously and explained to his mother: "They didn't have Lima beans so I bought jelly beans." Lima beans might be good *for* Jimmy but jelly beans are just *good*.

In some homes this moral issue regarding foods receives great stress, and we would suspect that the general effect is quite negative in terms of the child's maturation and relationships. In our society, milk has become the object of particular emotional envelopment, and, in the opposite way, candy. Too many of us perhaps tend to show deep concern with acting-out when our children eat candy and then offer them large quantities of highly sugared desserts. The problem is complicated for parents by a seeming lack of agreement among authorities, with the dentist threatening extraction if the parents allow the child to eat candy and the pediatrician handing Tommy a lollipop after an injection. But this is an ambivalent world, and we can have genuine compassion for today's mother as she tries to keep up with the legion of experts, including the child psychiatrist who shoots advice from the parapets of every strategic tower.

A clinical application of the moral implications surrounding food is found in the study of tuberculous children by Dubo (11). She explored the fantasies of children hospitalized with tuberculosis and reports on how frequently the child tends to associate the origin of the disease with food. Tuberculosis itself is often equated with an introjected foreign body that is unclean and that has somehow got inside the child. Dr. Dubo reports that her young patients tell her: "People get sick or get TB because they eat bad foods," or "I didn't come home on time or eat the right food," or "My mother gave me good things to eat but I only ate the bad ones." Here food is viewed as a concrete cause for an intangible illness. Another important cultural factor that is made clear in this study is the child's tendency to take personal responsibility for illness or disability and somehow in his fantasies to find a way to blame himself. That this is a price our children pay for the culture's emphasis on the concept of the self-made man is evident.

We should like to refer to one other cultural emphasis that has a bearing on a problem with which many of you have had to deal clinically, dieting to reduce weight. Benedict (12), describing the American culture, states: "Eccentricity is more feared than parasitism. . .The fear of being different is the dominating motivation reported in Middletown." Dubo and Gruenberg (13) discussing children's fears, underline as particularly important "the overwhelming emphasis on conformity" in America today. This need for conformity, often to a spurious standard emanating from Hollywood or the advertising agencies, takes a heavy toll in terms of the way our children accept themselves. A striking example of this obsession is seen in the attitude of girls toward

weight and "figure." Dieting to reduce as a fad, because the prevailing standard may be little short of cachexia, leads to many clinical problems. In our clinics we see many adolescent girls, preoccupied with appearance as the ultimate index of their ego-attitude, dieting to the point of anorexia.

These general remarks on the culture may suggest the manner in which your field of dietetics is integrated with the broader question of personality development in our society and must be studied in terms of this frame of reference. We hope that these observations may suggest others that have direct bearing on your particular jobs.

FEEDING PROBLEMS AND RELATIONSHIPS IN THE HOME

When you ask the young child in a psychiatric interview: "What is a mother?" the commonest response is: "She gives you food." Just as the mother is to the infant the direct provider of gratification through feeding, her role to the older child is symbolically very much identified with eating. Because of this relationship between mother and food, so meaningful in the child's fantasies, disturbances in the mother-child relationship are often reflected in feeding difficulties. There are numerous references in the literature to such neurotic feeding problems; Freud (14) provides a particularly lucid and comprehensive study. Earlier, we referred to the importance of the infancy period; there is strong evidence to suggest that frustration, tension, and lack of gratification in this period may serve as the matrix for later problems.

Food, symbolizing mothering to the child, also tends to symbolize security and comfort. When people are under tension, they are apt to complain that they feel empty. And in our clinical work we find frequently that the unhappy child with conflicts tends to feel a need for food between meals as a substitute for something lacking in his relationships. Allen, age thirteen, would express for many months during his psychiatric treatment the need for two malted milks each time he talked about his feeling of being abandoned by his mother. Walter, age twelve, markedly anxious in reaction to serious conflict with his parents, expressed an inordinate need for French fried potatoes during his therapy. Bruch (15) has provided us with extensive studies on obesity in children in which she outlines the psychogenic factors that lead to the need for overeating. In his study of refugee children Lehman (16) noted the extent to which they tended to gorge themselves with food upon coming to the United States. To the casual observer, it might appear that these children were hungry or greedy, but Dr. Lehman points out how their overeating represented a compensation for the absence of the comfort and affection that they had known through mothering.

Because it is one aspect of behavior that a child can so thoroughly control, eating may become a powerful weapon in his dealings with his parents. Negativism, stemming from disturbances in parent-child relations, is frequently manifested through refusal to eat or through lack of cooperation at mealtime. The weapon can be particularly potent when the child's behavior leads to an intense emotional reaction by the parent. John, age ten, was brought to a hospital clinic because his mother was concerned about his health and felt that his lack of appetite stemmed from some chronic illness. In the interview, John saw the problem very differently, telling us: "Don't worry, Doc. I eat enough between meals, but she gets so mad at meal time that I just wait till she blows up." In this case the child's negativism represented his triumph in a chronic battle that stemmed from deeply distorted relationships in the family. Bossard (17), referring to such situations, writes: "The meal may become a duel of silence with marked physiological as well as psychiatric effects." Spock (18), in the same vein, states: "The child comes to prefer to fight even if he has to go hungry to do it." Going one step further, Aldrich (19) points out that "the child can always win the honors of the day by vomiting."

Other psychologic problems may be reflected in eating disturbances. Because food sustains life and leads to well-being, the guilt-ridden, depressed child may refuse food as an unconscious expression of the need for self-punishment. Alice, age twelve, felt unworthy and intensely guilty because of her relation with her father and in reaction could not sit at the table or even tolerate the sight of food. "I can't stand it," she explained during therapy, "it just makes me sick." Peter, age eleven, would eat only cereals and just about enough to sustain life. In treatment, it was found that he held himself responsible for his parents' separation and was punishing himself "for my great sin," as he put it.

In most of these neurotic situations, the factors motivating the eating disturbance are unknown to the parents and child. Psychotherapy, serving to bring the dynamic etiologic problems to light and to allow for a reintegration of relationships, is usually necessary and often effective.

Just as the child tends to equate food with mothering, so the mother tends to relate her success as a mother with the child's acceptance of the food she offers. Anxiety in mothers is often manifested through handling of the child at mealtime. Thus we find concern as to the amount of food children eat, with rejection of food symbolizing failure for the mother. This may be seen in the earliest months when some mothers react with feelings of failure and depression to their inability to nurse. Later, anxiety may be manifested in preoccupation with caloric content and balanced diet. Levy (20), in his study of maternal overprotection, noted how rigidly some of his group computed every item of food to be certain that the diet was adequate. It is evident that

such obsessive preoccupation makes the child's adaptation difficult and is reflected in emotional discomfort.

In the average family, it is probably wise for children to have at least one meal in the total family unit, from the time the child is able to sit up in a high chair. In eating with the family, the child acquires status and a sense of integration and meaningfulness of family in a situation with vital emotional significance. Of course, the emotional tone should be positive, but it is not sufficient just to tell parents how important it is to have a comfortable climate during meals. Usually if the general tone of the home is pervaded with tension or hostility, mealtimes will not be pleasant. Feeding is not an isolated function, and its emotional overtones are a reflection of basic relationship patterns and the family affective tone.

While many of the problems to which we have referred stem from neurotic problems in parents we, as professional workers, have probably served to aggravate situations by some of our own compulsive emphases. One of the most significant expressions voiced at the 1950 White House Conference was the confusion of our mothers regarding child care in general. Mothers tell us that they feel threatened today, and it is time we looked into the many forces at play in our culture that interfere with the mother's feeling of confidence in her role. Many of the problems we have raised can be prevented through interpretation and guidance from the pediatrician beginning at the child's birth or even before. The trend toward group discussions or group therapy for young mothers, through which they may have an opportunity not only to listen but also to talk back in the comfort of a positive group identification, holds, it seems to us, great promise for mental hygiene of the future. We can hope that you, as dietitians, can enter into these projects bringing to them your special training in an area that gives rise to so much conflict.

FEEDING IN THE HOSPITAL SETTING

In much of the preceding, the experienced hospital dietitian will recognize implications for hospital dietary practice. We owe to Davis (21, 22) many of our present insights into children's attitudes towards feeding in hospital. Many of you are familiar with Dr. Davis' classic studies; although her first report was published more than twenty years ago, her findings still remain to be implemented in many of our services. Through the years Dr. Davis has shown with increasing clarity that if nutritionally sound foods are made available in an abundant supply, children will tend to eat what is optimal for them. Because of the varied backgrounds of hospitalized children, Dr. Davis' suggestion to present children with a variety of foods on a cart and allow them to choose their own meal as much as possible would seem to have much validity. Her observation that children are not particularly interested in whether their food is hot or cold has been borne out by many later workers; the younger the child, the more wary he is of hot food. Probably every dietitian faced with the perennial problem of keeping food hot for patients would wish that adults might adopt the child's attitude in this regard. Among other observations Dr. Davis points out that children prefer plain foods served as much as possible as they come, with vegetables served in the simplest ways and foods always recognizable rather than in mixtures.

Experience indicates that when children are given a fairly free choice of simple foods, there is less food waste, greater appetite, and a happier mealtime. That self-selection and self-regulation of diet is valid for hospitalized children is indicated in their well-being and progress. That it also has positive meaning for them is shown in the following comments that Dr. Davis tells us children make when transferred from a permissive to a nonpermissive dietary setting: "They will make me eat all my cereal"; "I can't have all the helpings I want"; "They make you eat what's good for you." In terms of feeding to meet emotional needs, the validity of the program that Dr. Davis has outlined would seem to be clearly established. That it has not been more generally implemented is probably a commentary on our inertia and dedication to the past.

An insightful pediatric service often provides an effective therapeutic situation for the child with a feeding problem. Many of you have dealt with children reported to be fussy about foods at home and yet adapting to the hospital program with enthusiasm. In these cases, the children have left behind emotional tension associated with mealtime. When the atmosphere on the ward is congenial and positive, the problem eater tends to follow the group pattern and through the process of identification with the group he is influenced to conform. Such cases provide an excellent opportunity for the pediatric service to work with the mother in interpreting the child's problem to insure that the improvement will carry over when the child returns home; unfortunately today this opportunity is too often overlooked. In their book, *Infants without Families*, Freud and Burlingham (23) make analogous reference to the social opportunities in the eating situation in nursery groups.

For the group setting to be positive for the child, efforts must be made to provide a therapeutic atmosphere sufficiently flexible to meet the individual child's needs. Basically, children must be handled at the level of maturity with which they come rather than according to chronological age. One three-year-old child will need to be fed; a second will rebel if feeding is attempted. Some children, because of their anxiety, will require a close relationship with a mother person at mealtime; others will become a part of the group easily and establish spontaneous independence for themselves.

One of the most positive developments in pediatric hospital practice in recent years, especially as it relates to the care of younger children, is the trend to include the mother more and more in the child's management while in hospital. Wallace (24) of Children's Hospital in Cincinnati has described interesting experiments in this direction. Planning the child's diet and helping in his feeding are especially vital areas for close cooperation between mother and hospital staff. Here is a situation in which the dietitian may and should be included as a member of the total therapy team. We are a long way from implementing these potential resources at present, and we realize that these trends imply more staffing and attention to the psychologic realities at hand than the average hospital can now afford. But, we are slowly moving in the direction of a total medicine in our hospital practice and, as we might expect, pediatrics is taking a lead in these developments. A recent paper by Bakwin (25) deals with these questions from the viewpoint of the pediatrician, and his emphases are most positive.

DIETARY CONSIDERATIONS IN DIABETES AND THE ALLERGIES

Brief reference to these specific illnesses, in the management of which dietary considerations play a major role, may suggest a further area for development in the dietitian's sphere. As in the treatment of all chronic illnesses of childhood, in diabetes the aim in management is to allow the child a pattern of living as close to the group standard as possible. Diabetes brings with it many special problems and because the restriction is dietary and because food symbolizes so much to the child, adjustment to the illness can be difficult. In their interviews, being collected by Dubo in a study now in progress, children with diabetes make pointed reference to the problem that food restriction imposes. Thus a diabetic girl describes a relative toward whom she feels much hostility in words that to her are particularly charged: "He isn't fat, but he eats." Another child states: "I just can't stand watching other kids eating all the time and me not being able to have anything that they have." Still another child comments: "I get hungry at mealtimes; I watch everybody else eating and I ask for things but they always say that I can't have them. I guess they don't really know how I feel about it deep inside."

The dietitian's role in guiding parents of diabetic children is complicated by fairly wide differences in emphasis on rigidity in dietary regimen in different centers. The trend, however, in the dietary treatment of childhood diabetes is toward greater flexibility and latitude. Within the frame of reference of her particular medical center, the dietitian, through direct contact with mothers, has an unusual opportunity for a therapeutic relationship. These mothers are often bewildered, frightened by their responsibility, and react with anxiety that may be transmitted to the child. Ritualization and overscrupulousness in relation to dietary management may result. These aspects of the total problem of diabetes are of more than theoretic interest; the emotional climate in which he lives affects the diabetic child's response to treatment and the course of his illness. The effects of emotional overtones and attitudes may have a very subtle and yet very telling influence on the outcome of many chronic diseases, one of which is diabetes. Guided by insightful dietitians, some mothers have found ingenious ways to create interest in meals for diabetic children that the whole family has enjoyed. Certainly through therapeutic contact with the oriented dietitian, the mother may lose her sense of fear and be freed to handle a difficult problem creatively. There is a need for further research in this area, and we look to a multi-discipline approach, led by the metabolist and the dietitian, to devise practical programs to minimize the tragic sense of isolation that too many diabetic children suffer.

A somewhat similar adjustment problem in relation to diet is met by the allergic child, particularly the child with eczema and, to a lesser degree, the asthmatic. The role of anxiety as a factor precipitating attacks in these cases is now well established. Anxiety about food is common. To some of these children, food becomes a menace, and the fear associated with the foods to which they are presumed allergic probably produces more attacks than the food itself. Because of the relationship of mother and food, the distortion may carry over into relationships further complicating the picture. It is of interest to observe how, in the course of psychiatric treatment, so many food allergies tend to disappear; it may be that in time, as our disciplines become closer, we may come to place less emphasis on some of the food allergies that are such a burden to these children today. As in the case of diabetic children, here too, mothers often are severely threatened by the child's special dietary needs, and we can recognize the therapeutic potential for the mother of a meaningful and constructive relation with the dietitian who guides her in her planning.

FEEDING IN THE PSYCHIATRIC TREATMENT OF DISTURBED CHILDREN

Residential treatment of disturbed children is a fairly new field but one for which there is a great demand, and we can look to widespread expansion of residential treatment facilities in America in the coming years. At the Neuropsychiatric Institute, University of Michigan, we have a twenty-five-bed Children's Unit in which we provide intensive treatment for severely disturbed children (26). Each child is assigned to a resident psychiatrist for individual direct psychotherapy, with perhaps daily interviews over the average six-month period that the child remains with us. However, this is only one aspect of

the total treatment, and the general tone or the therapeutic milieu of the ward or school for disturbed children is vital. Regardless of what happens in the direct treatment experience with the psychiatrist, these children require an accepting and gratifying living situation, oriented to meet individual needs. For this, a large staff is required. At present, in addition to our medical, nursing, attendant, psychology, and social service staffs, we have a school on our ward, an occupational therapy shop, a program in remedial reading, a project in psychodrama, and an intensive recreational program.

If there is one factor common in all these approaches, it is probably the use of food as an adjunct to therapy. As we survey our program, it is amazing to note how, spontaneously and insidiously, rather than by plan, food has come to play so important a part in the total treatment. Our children always seem hungry, and if they are to feel gratified, food must be available. I can imagine no situation in which the dietitian's role is more complex.

Because of the children's disturbance which brings them to the hospital, mealtimes can be very hectic. We have experimented with various methods of organization in the dining room and have found the following most successful: three or four children sit at a table with one adult and are served from platters which are on the table when they arrive. The adult may serve, or he may pass the platter depending on the group. In this way self-selection is possible to a degree, and there is no pressure to eat unwanted foods. Meals are kept as simple as possible, and it is most essential that each food be recognized and known to the children. Casseroles, soufflés, and whips are much more "throwable" than eatable, and the dietitian working with disturbed children soon learns this. Hamburgers, whole tomatoes, fresh fruit, and milk are most popular and most appreciated. In the dining room situation, the presence of the adult who represents a benign and accepting parent figure is important to these children and has vital therapeutic implication. But the therapeutic potentials of food extend far beyond the dining room.

In the occupational therapy shop, for example, a large bowl of potato chips may appear in the middle of the morning with the children free to eat them spontaneously. Janet Bee, describing our occupational therapy program, has written (26): "In the group, specific roles can be assigned to children to provide status for them. For example, during the regular O.T. period, special treats, such as popcorn or fudge, are prepared by patients who require group acceptance but lack the initiative to seek that acceptance themselves. The preparation of food may play an important role with children requiring infantilization through oral gratification. In some cases, playing the role of the mother, the therapist takes advantage of the situation in which the child is busy with his hands to feed him herself."

Similar use of food preparation is made in the evening program, which is supervised by the nurses. It is not uncommon to have a cake baking in one room, popcorn popping in another, and fudge burning in a third room simultaneously. Parties are a major event each week, and regardless of other efforts that may go into the party's preparation, it will usually not be successful unless the food is attractive and abundant. Eating away from the ward has particular significance for the children, and they are frequently invited to the coffee shop or to outside restaurants by staff members, especially before they leave. Food is used, too, in direct psychiatric interviews at times, and every child psychiatrist is aware of the importance of the candy bar at the right time.

In all these projects the symbolic significance of the food is of much greater importance than the food itself. Preparing, taking, and giving food all have specific values for children, with participation in the various projects stemming from each child's individual needs. The more infantile the child, often the greater are his oral needs, and therefore the greater the meaningfulness to him of accepting food and eating it. The frightened child can gain status through giving food and may find security in the group through this medium. Cooking and planning meals is important for the girls especially and serves as a focus for social orientation and maturation.

At present we are only at the threshold of definitive research in the field of residential treatment of disturbed children. In our own research, one problem to which we plan to give further attention relates to the role of food and eating in our total integrated therapy program. The implications of this research should extend probably beyond the area of treatment for disturbed children into the broader field of pediatrics and, in fact, child care in general. After all, the needs of disturbed children are no different from those of all children although quantitatively they may be greater.

SUMMARY

In this paper we have surveyed many aspects of the psychologic implications of eating, drawing from clinical experience as well as from the literature in the children's field. We have referred to the importance of appreciating the broader meaning of developmental psychology and have emphasized particularly the importance of the emotional climate in infancy. Cultural pressures have been considered in their particular relation to feeding, and we have pointed to the unsalutary tendency to invest feeding with moral issue-raising. Relationships between feeding and mothering have been outlined with case material to illustrate neurotic feeding problems stemming from distortions in parent-child relations.

Referring to the work of Dr. Clara Davis, we have considered the problem of feeding in the hospital setting, stressing the value of self-selection and the

importance of the affective tone of the milieu. Specific problems associated with diabetes and the allergies have been described and, finally, we have reported in some detail our experience in the psychiatric treatment of disturbed children in which food preparation and eating play so important a part.

Throughout the paper, we have tried to relate the problems raised to the interests and field of operation of the dietitian. Our material suggests to us many opportunities for the dietitian's therapeutic involvement in collaboration with representatives of other disciplines. Certainly the field of dietetics, integrated with pediatrics and child psychiatry, presents many avenues for therapy as yet uncharted, and we hope that some of the emphases in this paper may stimulate interest in these newer fields.

REFERENCES

(1) GESELL, A., ILG, F. L., AMES, L. B., AND BULLIS, G. E.: The Child from Five to Ten. New York: Harper & Bros., 1946.

(2) OLSON, W. C.: Child Development. Boston: D. C. Heath & Co., 1949.

(3) GESELL, A., AND ILG, F. L.: Feeding Behavior of Infants. Philadelphia: J. B. Lippincott Co., 1937.

(4) ILG, F. L.: The child's idea of what and how to eat. J. Am. Dietet. A. 24: 658, 1948.

(5) WATSON, E. H., AND LOWREY, G. H.: Growth and Development of Children. Chicago: Year Book Publishers, 1951.

(6) SPITZ, R. A.: Hospitalism. Psychoanalyt. Study of the Child 2: 113, 1947.

(7) RABINOVITCH, R. D.: The concept of primary psychogenic acathexis. Am. J. Orthopsychiat. 21: 231, 1951.

(8) BENEDEK, T.: The psychosomatic implications of the primary unit: mother-child. Am. J. Orthopsychiat. 19: 642, 1949.

(9) LEVERTON, R. M., AND COGGS, M. C.: Food choices of Nebraska children. J. Home Econ. 43: 176, 1951.

(10) MEAD, M.: Dietary patterns and food habits. J. Am. Dietet. A. 19: 1, 1943.

(11) DUBO, S.: Psychiatric study of children with pulmonary tuberculosis. Am. J. Orthopsychiat. 20: 520, 1950.

(12) BENEDICT, R.: Patterns of Culture. New York: Houghton Mifflin Co., 1934.

(13) DUBO, S., AND GRUENBERG, E. M.: A child goes forth. Child Study 25: 10, 1947.

(14) FREUD, A.: The psychoanalytic study of infantile feeding disturbances. Psychoanalyt. Study of the Child 2: 119, 1947.

(15) BRUCH, H.: Obesity in childhood. 3. Physiologic and psychologic aspects of the food intake of obese children. Am. J. Dis. Child. 59: 739, 1940.

(16) LEHMAN, E.: Feeding problems of psychogenic origin. Psychoanalyt. Study of the Child 3–4: 461, 1949.

(17) BOSSARD, J. H. S.: The Sociology of Child Development. New York: Harper & Bros., 1948.

(18) SPOCK, B.: Avoiding behavior problems. J. Pediat. 27: 363, 1945.

(19) ALDRICH, C. A.: Cultivating the Child's Appetite. New York: Macmillan Co., 1927.

(20) LEVY, D. M.: Maternal Overprotection. New York: Columbia University Press, 1943.

(21) DAVIS, C. M.: Feeding after the first year. *In* Practice of Pediatrics—Brennemann, J., ed., vol. 1, chap. 30. Hagerstown, Md.: W. T. Prior Co., Inc., 1942.

(22) DAVIS, C. M.: A practical application of some lessons of the self-selection of diet study to the feeding of children in hospitals. Am. J. Dis. Child. 46: 743, 1933.

(23) FREUD, A., AND BURLINGHAM, D.: Infants without Families. New York: International University Press, 1944.

(24) WALLACE, M.: An approach to parents and visiting hours in a children's hospital. Unpublished.

(25) BAKWIN, H.: Psychologic implications of early child care. Am. J. Nursing 51: 7, 1951.

(26) RABINOVITCH, R. D., BEE, J., AND OUTWATER, B.: The integration of occupational and recreational therapy in the residential psychiatric treatment of children. Am. J. Occupational Therapy 5: 1, 1951.

Amino Acid Requirements and Recommendations

If you are not a food faddist, the chances are very good that your diet provides all the protein your body needs for the maintenance and growth of your tissues, Professor William C. Rose, University of Illinois biochemist, said on May 24 when he received the Willard Gibbs Medal of the American Chemical Society's Chicago Section.

Minimum daily requirements of each of the eight "essential" amino acids, which must be obtained from the diet, were announced by the medalist.

Professor Rose's announcement was the climax of more than twenty years' research on the nutritive value of the amino acids. Ten years of studies on human beings, following preliminary experiments with rats and other laboratory animals, have shown that the amino acid requirements of the human body are surprisingly small. They are:

l-tryptophan	0.25 gm.
l-phenylalanine	1.10 gm.
l-lysine	0.80 gm.
l-threonine	0.50 gm.
l-valine	0.80 gm.
l-methionine	1.10 gm.
l-leucine	1.10 gm.
l-isoleucine	0.70 gm.

The "*l*" in each case refers to the levo-rotatory form of the acid, which is the only form the body can use. The recommended daily intakes have been listed as exactly twice these amounts, to take care of individuals who might have higher than average requirements.

Studies in Nutrition Education[1]

FLOY EUGENIA WHITEHEAD, D.Sc.

Research Fellow in Nutrition, The Harvard School of Public Health, Boston

FROM 1944–48, a research project in nutrition education was conducted in Ascension Parish, Louisiana, to discover effective ways of teaching nutrition to groups representative of various age levels. The immediate problem was to develop an effective program of nutrition education. The initiative for developing this program was taken by the local superintendent of education—not by the investigator or any group which might have sought out a potential study situation and proposed such a program.

A preliminary report of the first and second years' work was published in 1947 (1). The purpose of this paper is to review the major developments within the project from 1944 through 1948, and to report briefly the results of a 1950–51 evaluation study.

CONCEPTS OF NUTRITION EDUCATION

It was believed by the investigator that an effective program of nutrition education in Ascension Parish, Louisiana, should acquire certain characteristics. It should become a part of the total school program with specific instructional activities interrelated with other classroom experiences which teachers and children encounter in their usual day-to-day teaching and learning. In other words, nutrition instruction would not necessarily mean another subject or another course to be added to an already crowded curriculum, but rather it would become a part of the existing curriculum, based on the needs of children.

The program to be developed was not to consider the mere acquisition of certain nutritional information as an ultimate criterion of its effectiveness. It was held that if the nutrition education program were effective, it would do more than impart knowledge of facts—it would motivate children and others to develop food habits which would contribute to good nutritional environments.

More specifically, the study was based on the following assumptions:

(a) Food habits of school children could be improved through a program of nutrition education.

(b) An effective nutrition education program would be based on the needs of the children as evidenced by an appraisal of their food habits.

(c) An effective nutrition education program would continue to function after the nutritionist (investigator) left the program.

(d) If the program were to be effective after the nutritionist (investigator) left the program, it would require leadership from school personnel.

(d) If the program were to be effective, it would include planning, participation, and evaluation by teachers, pupils, parents, and other community leaders (as well as the nutritionist).

THE STUDY FROM 1944–1948

Methods and Procedures

During the first two months of the project (October and November, 1944), the investigator made plans with local school and community leaders to survey their existing programs of nutrition education. It was agreed by these local leaders and the investigator that knowledge of nutrition is important to the extent that it directs practice. Their primary concern was to discover what was done rather than what was known about nutrition. It was recognized that to some extent practice reflects knowledge of nutrition, but that knowledge alone does not assure good food habits. It was further agreed that when specific information about food habits is known, it provides a sound basis for developing effective programs in nutrition education. It indicates points for emphasis in nutrition instruction in classrooms

[1] A full report of these studies has been prepared by the author and is available in thesis form, under the same title, from the Department of Nutrition, Harvard School of Public Health. This research project was developed by the author while on the staff of the Louisiana Agricultural Experiment Station, 1944–48. The work was made possible by a grant from the General Education Board to Louisiana State University for a period of two years, after which the studies were supported by state appropriations for two more years. The evaluation studies conducted during 1950–51 were made possible by grants to the Department of Nutrition, Harvard School of Public Health, by the Nutrition Foundation, Inc., and Swift and Company. Special assistance was also given by the Ascension Parish School Board and the Louisiana State Department of Health. Received for publication January 26, 1952.

and presents specific problems of dietary availability. Such problems concern not only teachers and pupils, but also school lunch personnel, parents, administrators, health officers and staff, social welfare workers, and agricultural and industrial leaders as well as all other community leaders concerned with child health.

An initial appraisal of food habits in Ascension Parish was made in December, 1944. As soon as the survey was completed, a decision had to be made as to how the information in the seven-day records of food habits could be summarized and made most useful for teachers. It was believed unwise to attempt to treat these data as though they were dietary histories which might lend themselves to calculations of nutrients, not only because of limited time and personnel, but also because the teachers were not trained in those procedures. It was believed also that when teachers participate in accumulating and interpreting results of food habits surveys, they gain an appreciation and understanding of the results which yield increased interest in whatever problems are discovered through making the survey.[2]

This 1944 appraisal of food habits yielded data on which nutrition education activities were focused. Teacher committees, representing various grade levels, were organized during a work conference in July, 1945, in order to study results of that appraisal and to plan programs for solving the nutrition education problems in their five separate school communities. A supervisor of school lunches was also appointed to the administrative staff to improve the school lunch program and to work closely with the investigator to coordinate that program with activities in classrooms and with those of the teacher committees.

A second appraisal, made in December, 1945, yielded data indicating considerable improvement in food habits. This motivated teacher committees to get together for a parish-wide meeting to discuss what they had done to bring about improvement. Thus the first evaluation meeting of teacher committees was held in March, 1946. A summary of that meeting was prepared and mimeographed for distribution to other teachers and interested community leaders.

During 1946 and 1947, the local supervisor of school lunches was able to assume increasing responsibilities for working with teacher committees and school lunch personnel. The investigator attended meetings of teachers and school lunch personnel only on request. The third appraisal was made in December, 1946, and was followed by another parish-wide evaluation meeting which indicated an increasing scope of nutrition and health activities of the teacher committee.

[2] A detailed description of the evaluation procedures developed throughout the project has been published as a booklet (2).

Following the fourth appraisal of food habits, made in December, 1947, the evaluation meeting (held in March) was conducted entirely by local leaders; the investigator left the project shortly after the data were processed and ready for publication.

CHARACTERISTICS OF THE NUTRITION EDUCATION PROGRAM

The nutrition education program developed in Ascension Parish, 1944 through 1948, was most informal in character, yet it was specifically planned and evaluated by those concerned. There was neither a formal course of study nor a selected textbook "to be covered" within a given period of time. The emphasis was placed primarily on nutritional behavior which for purposes of this study was summed up in the term "food habits." Teachers planned teaching units (a series of lessons related to a specific problem) based on specific needs of children as revealed by annual appraisals of food habits. Teachers adapted nutritional subject matter to the interests and age levels of their pupils. Teachers and pupils studied their nutritional problems in informal classroom discussions. They also sat together in lunchrooms to enjoy nutritious lunches and the attractive atmosphere which was created by coordinated efforts of teachers, parents, school lunch personnel, administrative staff, school board members, and students in agriculture and home economics.

The nutritionist and the parish Supervisor of Materials selected nutrition education materials and made them available to teachers, thus providing a wealth of materials and teaching aids from which to select books, films, posters, and pamphlets for illustrative purposes. Often teachers and pupils created exhibits, plays, radio skits, and free verse related to nutritional activities. Some teachers planned for special activities at the end of their nutrition units or lessons, such as a dinner for mothers in the community. Teachers and sometimes pupils met with school lunch personnel to plan and evaluate lunches served at school; they sent copies of menus home to parents and often answered requests for suggestions about meal plans for breakfast and supper which would supplement the lunch to the extent of giving children at least "14 points" (servings) worth of protective foods. There was no plan of graded lessons in this program and, while the subject matter considered from year to year was apt to be similar, the approach to the units or lessons was different at each grade level, and the emphasis was in accord with the particular needs and interests of the group.

The results of the annual survey of food habits afforded many opportunities for correlating nutrition with other subjects. Spelling lists were developed in each grade from the misspelled words found on the records of food habits. Pupils used scores for food habits in arithmetic exercises, and at the upper

elementary level, they calculated percentages and made bar graphs based on results of the surveys. A social studies class wrote a radio skit, using principles of writing studied in a high school English class, to illustrate results of a food habits survey. Home economics teachers included food preparation and meal planning in their programs with adults and high school girls, and agriculture teachers worked with high school boys and veterans' groups to produce school gardens and supervise home production of food—eggs, hogs, beef calves, fruit trees, and soil protection. All activities in these areas were based on results of the annual surveys, and many conferences were held with teachers and school lunch personnel for in-service training problems with reference to solving existing nutritional problems. The conduct of all meetings was informal, yet specifically centered on group discussion and decision.

An important aim of the investigator's in-service training program was that of developing leadership among teachers and parents in school-community situations. Teachers have attended meetings both in Louisiana and other states where they have contributed constructively to developing nutrition education materials. One teacher attended the Nutrition Education Workshop conducted at Harvard University in the summer of 1949. It is believed that the teachers in Ascension, with help from nutritionists and supervisors (representing the state departments of Health, Education, and Welfare; University Extension; the Louisiana Experiment Station; and Teacher-Training Services) have developed techniques and procedures for nutrition education which are worthy of trial in other situations.

In general, the nutritionist worked with teachers as individuals and sometimes in small groups. Her work may be described as being very gradual with conscious effort not to over-emphasize nutrition education, but rather to recognize the other disciplines needed to guide the development of children. Her work was in terms of specific problems of the moment—both those which were recognized by teachers and those which were not. For example: a first-grade teacher was concerned because some of her pupils would not eat all the food on their plates at lunch; it had not occurred to her that a part of the problem could be solved by approaching the school lunch manager who immediately had smaller servings put on plates for these children. The next approach was that of having the teacher "silently" direct these children not by mentioning food, but rather by sitting with them, eating her own lunch (the same food as that served the children), and having a happy time with them. Soon the children were eating everything on their plates and at times asking for more.

Throughout the entire project the investigator worked through teachers, using informal group approaches to problems of planning, participation, and evaluation. The teachers—not the investigator—taught the children and carried responsibility for meetings and conferences with parents and community agencies with supervisory help from the investigator when needed. Together they worked within a program based on a philosophy of education which encouraged experimentalism.

EVALUATION STUDIES IN 1950–51

Three years after the investigator left the project, a fifth appraisal of food habits was made as a means of evaluating the effectiveness of the work done from 1944 through 1948. By this time (December, 1950), teachers and other leaders in the parish were eager to evaluate the program of nutrition education which they had continued without the leadership of the investigator.

It was considered that results of an initial appraisal of food habits, as compared with subsequent ones done at appropriate intervals, could serve as a control by which to judge the effectiveness of the program. To be able to present comparable data on food habits over a period of seven years is unusual, and it is indicative of genuine interest by many persons concerned in this study.

Improvement in Food Habits

In Table 1 is shown a significant improvement in the percentage distribution of good, fair, and poor food habits in Ascension from 1944 to 1948 and continued improvement from 1948 to 1951.

The changes in the percentage distribution of good, fair, and poor food habits over the seven years are so obvious that no test of statistical significance is necessary. However, when these data were tested, using chi-square, it was found that the variations between ratings for food habits for 1944–45 and 1947–48 as well as for 1947–48 and 1950–51 were highly significant, having a value of $P < 0.001$. These variations were significant not only statistically, but also in terms of educational effectiveness and the promise of nutritional improvement.

A second analysis of the information given on the records of food habits is summarized in Table 2. The data show that the trends in various food in-

TABLE 1

Percentage of school children, grades 2 through 11, having good, fair, and poor food habits in 1944–45, 1947–48, and 1950–51 (white public schools, Ascension Parish)

YEAR	TOTAL NUMBER OF CHILDREN	RATING					
		Good		Fair		Poor	
		Number of children	Per cent	Number of children	Per cent	Number of children	Per cent
1944–45	1529	25	1.6	909	59.5	595	38.9
1947–48	1851	470	25.4	1242	67.1	139	7.5
1950–51	2158	668	31.0	1388	64.3	102	4.7

TABLE 2

Intakes of food groups by children in grades 2 through 11 Compared with standards based on the Recommended Dietary Allowances (Ascension Parish)

FOOD GROUP	PERCENTAGE OF STANDARD		
	1944–45	1947–48	1950–51
Milk	46	57	60
Eggs	50	76	90
Fruit	56	76	78
Non-citrus	35	60	69
Citrus	109	124	89
Meat (lean only)	29	84	54
Whole grain products	23	40	58
Butter and fortified margarine	57	91	98
Potatoes (Irish and sweet)			
Vegetables	18	47	45
Green leafy	110	123	126
Other			

takes were in the desirable direction. The simultaneous increase in eggs and decrease in meat during 1948–1951 is attributed to the nutrition education program which emphasized the need for those specific changes. There was a decrease in whole grain products because some schools had difficulty obtaining whole wheat bread during the 1950–1951 survey week. Monthly reports of the school lunch supervisor indicate that whole wheat bread is usually served.

CONTINUED EMPHASES IN NUTRITION EDUCATION

The investigator conducted several informal group meetings with teachers and other community leaders while in Ascension Parish during 1950–51, for the purpose of collecting evidence about their nutrition education program at that time. The following criteria for evaluating emphases in the program were developed by the investigator and used as a basis for the group meetings. It was believed that reports and observations of the teachers and community leaders would indicate influences of the 1944–1948 project. Criteria for evaluation in 1950–51 were:

(1) Teachers and pupils keep some records of food eaten.

(2) Teachers stress the importance of food groups reported in the lower percentage intake levels.

(3) Teachers and pupils evaluate their food habits by counting "points."

(4) All elementary and some high school teachers include some phases of nutrition in their teaching.

(5) Attractive and nutritious (high in protective foods) lunches are served at school.

(6) Teacher committees continue to work on nutritional and health problems.

(7) Teachers use a variety of methods and materials in teaching nutrition, based upon specific needs.

(8) Pupils and teachers cooperate in planning and evaluating nutrition education activities.

(9) Teachers show interest in helping pupils develop good food habits.

(10) Teachers and pupils have improved food habits.

(11) Teachers and pupils have periodic health "check-ups," including weight, vision, and hearing tests.

(12) Teachers and pupils have improved school attendance records.

(13) School lunchroom facilities have been improved.

(14) More pupils participate in school lunch program.

(15) Nutrition is taught as part of the curriculum.

(16) Nutrition is taught in relation to the child's total school experience—it is not an extra subject and does not require extra time during the school day.

(17) In high school, boys as well as girls study nutrition in home economics, social science, and agriculture classes and in lunchrooms.

(18) Parents, community agencies, and many local and state leaders show interest in nutrition education.

(19) The demands of parents and children for protective foods increase sales of these foods in local stores.

(20) Teachers and other community leaders indicate interest and desire to repeat the food habits appraisal as an evaluation procedure in nutrition education.

Without exception there were evidences in support of the criteria listed above.

IMPROVEMENTS IN SCHOOL LUNCH PROGRAM

When the research project started in 1944, there was no trained person in charge of any of the lunchrooms; each school principal was responsible for the management of the lunchroom in his school. Customarily, five or six mothers from the community prepared the food which was planned by the principal, usually in accord with his food likes and dislikes. Every school had a lunchroom of some sort, and for nearly all of them plans were being made to build new lunchrooms or to enlarge and improve what they had. Facilities were adequate for serving both teachers and children in all of these schools except the high schools at Gonzales and Donaldsonville.

Records show that school lunches improved over the project period, 1944–1948, to the extent of supplying approximately one-half of the protective foods recommended for a day, when the standard set was 14 points (Table 3).

It was this improvement in school lunches and the simultaneous guidance of children in learning to like and eat foods served at school which accounted for most of the improvement in food habits. Although the improvement in meals served in the homes appears to have been relatively small, the data suggest

that parents continued to supply their children with protective foods to at least the same, or a slightly increased extent in 1947 as compared to 1944. This is interpreted to mean that serving 7-point lunches at school did not cause parents to feel less responsible for serving protective foods to their children—indicating close working relationships between parents and school personnel. It is believed that sustained improvement in lunches at school and continued guidance in school-community nutrition education will eventually influence all meals served so that they will include protective foods in abundance.

The investigator and the parish supervisor of school lunches met with school lunch managers and teacher committees once every six weeks during each school year to score and evaluate menus for "point" value, some source of ascorbic acid daily, and variety. This practice was initiated during the 1944–1948 period and continued until 1951 at the discretion of local leaders.

It is believed that the use of the point system for evaluating meals contributed to the in-service training of school lunch personnel who were responsible for changes in the quality of food served. It is also believed that results of the initial survey of food habits motivated teachers first. They, in turn, motivated pupils, parents, and school lunch personnel to improve the dietary opportunity for children in Ascension Parish through a specifically directed program of education, which included school gardens, workshops for lunchroom managers and workers, improved lunchroom facilities, special units of instruction in classrooms and lunchrooms, and home projects of food production, preparation, and preservation.

TABLE 3

Sample school lunch menus served in three years (Ascension Parish)

FOOD	POINTS
1944–45	
Stew meat and gravy	1
Cooked cabbage	1
White bread (unenriched)	0
Moon cake (cookie)	0
½ pt. milk	1
Total points	3
1947–48	
Turnip greens	1
Stew meat and gravy	1
Unpolished rice	1
Fortified margarine	1
Orange	1
Whole wheat bread	1
½ pt. milk	1
Total points	7
1950–51	
Scrambled eggs (powdered) and creole gravy	1
Baked sweet potato	1
Mustard greens	1
Butter	1
Slice of cheese	1
Whole wheat bread	1
Apple	1
½ pt. milk	1
Total points	8

NUTRITION EDUCATION CAUSES IMPROVEMENT IN FOOD HABITS

Usually, changes in food habits are due to several factors described as physical and socioeconomic, which embrace moral dictates, social standards, income levels, dietary opportunity as influenced by crop failure or food distribution channels, and scientifically sanctioned processes (3). So far as this investigator has been able to determine, the dominant factor influencing the change in food habits in Ascension Parish from 1944 to 1951 was the educational program. That factor may be described as an inter-disciplinary process through which desirable changes occur.

When plans were being made to make the evaluation studies in 1950–51, Margaret C. Moore[3] offered the use of data collected in 1947 on food habits of children in St. Martin Parish, Louisiana, as a control for the Ascension study. Further plans were made to collect comparable data from these two communities for 1950–1951 in order to establish stronger evidence on which to base conclusions relative to a parish (county) where a special program of nutrition education had developed and one in which no unusual nutrition program was in progress.

[3] Consultant in Nutrition, Louisiana State Department of Health, New Orleans.

TABLE 4

Comparison of Ascension Parish and St. Martin Parish, Louisiana, with respect to intakes of food groups by children in grades 4 through 11 (compared with standards based on the Recommended Dietary Allowances)

FOOD GROUP	PERCENTAGE OF STANDARD			
	1947–48		1950–51	
	Ascension Parish	St. Martin Parish	Ascension Parish	St. Martin Parish
Milk	60	56	63	51
Eggs	76	77	94	83
Fruit				
Non-citrus	82	36	83	53
Citrus	63	23	77	19
Meat (lean only)	126	51	87	45
Whole grain products	100	24	60	30
Butter and fortified margarine	44	11	63	22
Potatoes (Irish and sweet)	95	39	99	54
Vegetables				
Green leafy	48	26	44	45
Other	128	36	130	50

A comparison of data on food habits in Ascension Parish with those of nearby St. Martin Parish showed that food habits in Ascension were significantly better than those in St. Martin for the years compared (Table 4).

These data and observations of activities which indicated sustained interest in nutrition education are interpreted to mean that the program procedures developed in Ascension Parish during 1944–1948 were of such character as to continue influencing food habits for at least three years after the initial supervision was withdrawn. One of the long-lasting developments of the 1944–1948 project was the organization and work of teacher committees. Reports of committee work made at the sixth annual evaluation meeting in March, 1951, indicated continued progress in nutrition education both in school-community situations and in leadership training.

CONCLUSIONS

The nutrition education program developed in Ascension Parish, Louisiana from 1944 through 1948 was markedly effective, inasmuch as it caused a significant improvement in food habits of school-age children and it continued to function for at least three years after the nutritionist (investigator) left the parish.

The following characteristics of the nutrition education program in Ascension are important and worthy of emphasis. They are not to be considered as conclusive statements of fact; rather, they imply hypotheses which need to be tested.

(a) The program was planned, developed, and evaluated by the investigator, teachers, pupils, parents, and other community leaders.

(b) It did not begin *after* a survey of food habits was made, but rather with the *planning* for that survey. It began when the nutritionist (investigator) conducted group meetings of teachers and other community leaders for purposes of getting recognition of local nutrition education problems. The outstanding problem evolving from the discussion-decision techniques applied in these meetings was that of making a survey of food habits and defining the purposes such a survey might serve.

(c) It was based on the needs of children as determined by an appraisal of food habits.

(d) It was guided by the leadership of school personnel after the nutritionist (investigator) left the parish.

(e) It was not limited to a few courses of instruction for a selected and/or segregated group of children; it included all children in the five schools in this study.

(f) It was part of the regular school program centered upon the needs, interest, and age level of children. It was correlated and integrated with the total school program, and it became the center of a school program which was based on community needs and had as its theme "The Improvement of Living through Community Education."

(g) It was a program in which the classroom teachers were responsible for the instruction and guidance of their own pupils, both in classrooms and in lunchrooms.

(h) It was a program in which the classroom teachers and the nutritionist together determined local nutrition education problems and then the nutritionist guided the teachers in the solution of those problems.

(i) It was a program characterized by three outcomes which seem especially practical; the development of an evaluation device for teachers to use in discovering what they should emphasize in their nutrition education programs; the organization of teacher committees for purposes of planning, conducting, and evaluating nutrition education activities in terms of school-community problems of health; and the development of a point system for evaluating food habits—a system so simple that children in the lower elementary grades could use it.

REFERENCES

(1) WHITEHEAD, F. E.: Research in nutrition education. J. Am. Dietet. A. 23: 310, 1947.
(2) WHITEHEAD, F. E.: Appraising Food Habits, an Evaluation Device with Suggested Procedures for Classroom Teachers. Baton Rouge, La.: Louisiana State University, 1948.
(3) MEAD, M.: The factor of food habits. Ann. Am. Acad. Pol. & Soc. Sc. 225: 136, 1943.

Brucellosis on Way Out

Fiscal year 1951 marked another large step in the eradication of brucellosis from cattle. Since 1946, when the infection rate was 5 per cent, the figure has dropped steadily to the present 3.1 per cent (a decrease of 0.4 per cent over 1950).

During the year, 5,640,836 blood agglutination tests were completed on cattle in 565,155 herds. Sixty-five per cent of the reactors were removed for immediate slaughter and 35 per cent held for later disposition under the deferred slaughter and vaccination plan. The high percentage of those removed for immediate slaughter, considering the fact that reactor elimination is optional in most states, indicates that livestock owners are aware of the danger to both animals and human beings from retention of infected animals.

Eighty-seven per cent of the herds, as compared with 84 per cent last year, were brucellosis-free, and the average number of reactors per herd dropped from 2.5 to 2.4.—*From the Report of the Chief of the Bureau of Dairy Industry, Agricultural Research Administration, 1951.*

Early Speculations on Diet and Longevity. I.[1]

ADELIA M. BEEUWKES

Associate Professor of Public Health Nutrition, University of Michigan, Ann Arbor

Every stage of human life except the last, is marked out by certain defined limits; Old Age alone has no precise and determinate boundary.—Cicero on Old Age

A study of the history of our knowledge of any particular specialty in the field of dietetics leaves us with a sense of great humility. Whatever knowledge we claim has accumulated during the lifetimes of many who have desired to add their small bit to what their predecessors advocated whether philosophy, speculation, or science was its basis. Hippocrates, generally revered as the "Father of Medicine," claimed that the art and science of medicine was established because the same food did not suit all persons under all conditions. Hippocrates wrote (1): "For the art of Medicine would not have been invented at first, nor would it have been made a subject of investigation (for there would have been no need of it), if when men are indisposed, the same food and other articles of regimen which they eat and drink when in good health were proper for them, and if no others were preferable to these . . . To me, then it appears, . . . that nobody would have sought for medicine at all, provided the same kinds of diet had suited with men in sickness as in good health." Although Hippocrates placed great importance on dietary regulations, he provided no suggestions for the type of diet that would assist an individual to attain old age.

Roger Bacon (1214?–1294) is considered by many as the greatest philosopher of the thirteenth century, and it is significant that he devoted one of his numerous treatises to *The Cure of Old Age and Preservation of Youth* (2). He had gathered knowledge from earlier and contemporary publications by the Greeks, Latins, and Arabians whose attitudes swayed medical thought for a long time. His suggestions on diet were dictated by the concept of the four humors and are difficult to relate to modern dietetics. Concluding one of his several discussions on medications and treatments then in vogue, Roger Bacon presents a bit of philosophy as applicable today as it was seven centuries ago: "But the use of these things and medicines is of no use, nor anything avails them that neglect the Doctrine of the Regiment of Life. For how can it be, that he who either is ignorant or negligent of Diet, should ever be cured by any pains of the physician, or by any virtue in physick? Wherefore the physicians and wise men of old time were of opinion, that diet without physick sometimes did good, but that physick without due order of Diet never made a man one jot the better."

An early publication on *The Art of Living Long* (3) by Luigi Cornaro (1464?–1566) is one of the classics frequently referred to in the writings on old age. Cornaro writes that between his thirty-fifth and fortieth year his infirmities were very great because he had been intemperate in the matters of eating and drinking. He enjoyed great wealth and had no reason to be frugal in his mode of living. He described his symptoms in *Discourses of the Sober Life* (Discorsi della Vita Sobria) (4). "My stomach became disordered, and I suffered much pain from colic and gout, attended by that which was still worse, an almost continual slow fever, a stomach generally out of order, and a perpetual thirst. From these disorders, the best delivery I had to hope was death." It is interesting to speculate what a present-day diagnosis might have included!

After his physicians had unsuccessfully tried many forms of treatment, they informed him that there was still hope for him if he were willing to completely change his manner of living. He was advised to live a strictly sober and regular life. This he did. He extolled the virtues of his way of living in writings which continued past the age of ninety-five. Emphasis is usually placed on his method of fasting, but it seems likely that his life was prolonged by a diet adequate in quality though restricted in quantity. Cornaro's diet was most likely within the realm of

[1] Presented at the 34th Annual Meeting of The American Dietetic Association in Cleveland, on October 11, 1951.

adequacy and more emphasis should be given to the choice of his food and less stress placed on ill-defined starvation as the means to long life. Cornaro described his diet, and it does not suggest starvation (4): "O, how advantageous it is to an old man to eat but little; therefore, I take but just enough to keep body and soul together, and the things I eat are as follows: bread, panado, eggs (the yolk), and soups. Of flesh meat, I eat kid and mutton. I eat poultry of every kind; also of sea and river fish. Some men are too poor to allow themselves food of this kind, but they may do well on bread (made from wheat meal, which contains far more nutriment than bread made from fine flour), panado, eggs, milk and vegetables. But though a man should eat nothing but these, he may not eat more than his stomach can with ease digest, never forgetting that it is the over-quantity which injures, even more than the eating of unsuitable food."

The Castel of Health (5) by Thomas Elyot (1499–1546) is one of the earliest medical books published in English in the vernacular.[2] The edition available was published in 1561, but the first edition was dated 1534. Elyot was a diplomat and author—not a physician. He was well acquainted with the teachings of Galen, Erasmus, and the Italian Humanists. He credits Galen with the suggestion that foods enjoyed by a person should be served him when ill and that necessary dietary changes should be made gradually when the person is well, not when he is ill. Elyot's genuine interest in food was evidenced by the fact that he devoted one-third of his ninety-seven-page treatise to a description of the preparation and use of various foods. When discussing diet for the aged, he particularly stressed the types of meat they should use. He urged the choice of meats easily digested and recommended that wine be served with them. He abhorred gluttony, continually urging moderation in diet "having respect to the strength or weakness of the person." Elyot's suggestion regarding the number and size of meals served older persons is one that strikes a rather familiar note in modern publications. His justification for this plan is rather unique: "Always remember that aged men should eat often, but little at a time for it fareth by them, as it doth by a lampe, the light whereof is almost extinct, which by pouring in of oil little and little, is long kept burning: and with much oil poured in at once, it is clean put out."

[2] According to information received from the Library of Congress, September, 1951, the first medical book published in English in the vernacular was Bishop Canutus' (or Knutsson's) *A Litil Boke the which traytied . . . many gode thinges necessaries for the . . . Pestilence. . .* The first of the five recorded editions of this treatise is undated, but it is believed to have been printed in London in 1486. The Library of Congress possesses a facsimile of this book reproduced from an apparently unique copy in the John Rylands Library in Manchester. Another early medical work in English is the *Gouernayle of Helthe* which was printed by Wm. Caxton in 1489.

Shortly after the publication of Elyot's *The Castel of Health*, Thomas Cogan (1545?–1607) published *The Haven of Health* (6). Cogan based much of his work on the writings of Hippocrates, while Elyot reflected some of Galen's thinking. Cogan has quoted directly from *The Castel of Health* and the *Salerno School*, not always giving due credit to Elyot's earlier publication. Cogan recommends Galen's dietary plan which includes three major points: "Never to eat and drink his fill, never to eat any raw thing, to have alwaies some sweet savour about him." This publication contributes nothing that had not been previously published on diet; the author merely reiterates the need for limiting the diet to the individual's needs but does not describe what the needs might be.

FRANCIS BACON

Francis Bacon (1561–1626), one of the most illustrious philosophers of modern times, wrote one of the earliest publications devoted in great part to the question of longevity. The title of this fascinating publication, dated 1664, is *History Natural and Experimental of Life and Death, or Of the Prolongation of Life* (7). Bacon was an enthusiast about the relation of food to longevity and stated his opinion very firmly. "Certainly this is without all question, that *Diet* well ordered bears the greatest part in the prolongation of life. . . Curing of Diseases is effected by Temporary Medicines but Lengthening of Life requireth observations of diets." He refers to Cornaro's publications and writes that it seems to be approved by experience that a spare diet "as prescribed by the strict rules of a monastic life or practiced by hermits which have necessity and poverty as their rule, rendereth a man long lived."

He differentiated between therapeutic and normal diets in this manner (7): "Those things which come by accident, as soon as the causes are removed cease again; but the continued course of nature, like a running River, requires a continual rowing and sailing against the stream: therefore we must work regularly by Diets. Now Diets are of two kinds: *Set Diets*, which are to be observed at certain times, and *Familiar Diet*, which is to be admitted into our daily repast. But the *Set Diets* are the more potent, that is, a course of medicines for a time; for those things which are of so great virtue that they are able to turn nature back again, are, for the most part, more strong, and more speedily altering, than those which may without danger be received into a continual life." Bacon's philosophy and many of his suggestions for the preparation and service of food sound strangely familiar.

In describing the particular questions that must be answered if we are to understand the aging process, Francis Bacon mentioned several problems that still confront us today. His plan of study is one worthy of review today. He planned to study the circumstances which make for long or short lives in

many living creatures, considering the ages of the world, the several regions, climates, and places of their nativity and habitation. He included plans for inquiry touching the length and shortness of life in men according to their races, constitutions, habits of body, statures, and the manner and time of their growth. He asked that all reference to astrological observations be omitted; however, he was interested in learning the month the individuals were born, whether by day or night. He wrote: "Inquire touching the *length* and *shortness* of *life* in men according to their Fare, Diet, Government of their Life, Exercises, and the like. . . . Inquire touching the Length and Shortness of Life in men according to their Studies, their several Courses of Life, the Affections of the mind, and divers accidents befalling them."

He further recommended study of the medicines which are thought to prolong life. "Inquire touching the signs and prognosticks of long and short life; not those which betoken death at hand (for they belong to an History of Physick) but those which are seen and may be observed even in health. Inquire touching those things which pertain to the whole process of alimentation, (by which the Body of man is repaired) that it may be good, and with the best improvement." He suggested that not every kind of death be investigated. He was not interested in death by violence but rather "deaths which are caused by want and indigence of nourishment. They are those deaths only which pertain to a decay of nature and mere old age."

Today we feel a need for better understanding old age in its entirety. Francis Bacon stated that very need when he wrote (7): "Lastly, because it is behooveful to know the Character and Form of Old Age, which will then best be done if you make a Collection of all the Differences, both in the State and Functions of the Body, betwixt Youth and Old Age, that by them you may observe that it is that produceth such manifold Effects: let not this inquisition be omitted."

A study of the literature reveals that writers for two centuries ignored his appeal for a scientific study of aging and the aged.

Methods for food preparation are described in great detail by Thomas Tryon (1634–1703) under the pseudonym Philotheos Phyhiologus in *Way to Health, Long Life and Happiness* (8), published in 1683. Although Tryon dealt with many subjects, including the four humors, women, marriage, and so on, he emphasized good food preparation as a prerequisite to long life. Except for his use of too much water in cooking vegetables, his suggestions are those advocated today. He urged that vegetables be fresh, of good color and good flavor, and that grains be dried thoroughly by the sun before they are gathered. Fruits should be "ripe and fresh gathered" and eaten before the main course of the meal. He extolled the virtues of herbs, particularly the first gathered in the spring, describing winter as the "rest and sabboth of the earth." His writings are a curious medley of mystical philosophy and dietetics.

BEGINNING OF MODERN GERIATRICS

The writings of Sir John Floyer (1649–1734), particularly *Medicina Gerocomica* (9), have generally been accredited as the beginning of modern geriatrics. Floyer was one of the most original physicians of the scientific period in which he lived, his works showing independence of thought and the spirit of research. He was the first to make regular observations on the rate of the pulse. He used a "pulse watch," a watch constructed to run for exactly 1 min. His writings have a definite Galenic influence and give evidence of the use of much information previously published by Roger Bacon. Floyer described the diseases of old persons and suggested treatment, including dietetic advice. He did not, however, present any suggestions for the type of diet which may assist an individual to reach an old age. His diets are primarily therapeutic in nature and are described as "cooling Diet, Antiscorbutic Diet, Diluting Diet," and so on.

Although much of the information presented by Dr. George Cheyne (1671–1743) in his publication *An Essay of Health and Long Life* (10) was a reiteration of ideas published previously, his emphasis on the need for adjusting the diet to the individual's requirements is of particular interest. During his youth, Dr. Cheyne was accustomed to sedentary and temperate habits. Upon moving to London, however, he led a rather gay life, enjoying food, drink, and light-hearted companions. After a few years of residence in London, obesity became a matter of great concern, and he writes that his health suffered. He abandoned his carefree existence and lived a moderate life, restricting his diet almost completely to vegetables. After losing a considerable amount of weight, he reports that his health was regained. However, his old enemy corpulence again reared its ugly head, and a restricted diet was subsequently followed for the rest of his life.

Because of his own experiences, his writings on diet are sincere and enthusiastic. He indicated that the quantity of food necessary for an individual would depend on his "age, sex, nature, strength, country and exercise." The climate would alter his needs, cold climate requiring more food than a warm climate. He stressed the fact that professional and sedentary persons require much less food than those doing manual labor. He suggested (10) "first by Experience to find out how much fits one so as to be lightsome and healthy under it, and ever after to judge the quantity by the eye; Nature requiring therein no mathematical exactness." Cheyne urged his readers to avoid overeating, referring to the experiences of Cornaro. He advised the aged "to lessen their diet gradually, as they grow older, before nature has forced this Diminution upon them." His interest

in preventive medicine is evidenced in these statements (10): "Most men know when they are ill, but very few when they are well. And yet it is most certain, that 'tis easier to *preserve* Health than to *recover* it, and to *prevent* disease than to cure them. Towards, the first, the means are mostly in our own power: Little else is required than to *bear* and *forbear*. But toward the latter, the means are perplexed and uncertain."

MACKENZIE

The suggestion that longevity may proceed either from nature or from art but chiefly from their happy conjunction was made by MacKenzie (1680?–1761) in his publication *The History of Health and the Art of Preserving It* (11). Among the natural marks by which he felt it could be discerned whether a man is made for long life, he mentions that the individual should be descended, at least by one side, from long-lived parents; he should have a calm, contented, and cheerful disposition and should be well nourished, its evidence being manifest in both the hard and soft tissues of the body. This author refers in rather great detail to the publications of Francis Bacon, Hippocrates, and the great Boerhaave, agreeing only in part with their philosophy regarding health and long life.

He indicated his respect for food as an important factor in the maintenance of health, (11): "He who would thoroughly understand this subject, must not only know what qualities every sort of food is endowed with from nature, but also what new qualities it received from art, in the various ways of dressing it. . . and it is of great moment to a man's health, whether his common bread be white or brown, well or ill baked. Every physician should endeavour to understand the nature and constitution of different persons, with respect to what they eat and drink; and should not only make himself acquainted with the various complaints which arise from various sorts of ailment, but should also know why they happen to some, and not to others. . . The great assistance which art affords towards attaining long life, arises from the benefit of good air and good water, from a frugal and simple diet, from the wise government of our appetites and passions, and in a word, from a prudent choice and proper use of all the instruments of life, and rules of health."

MacKenzie had apparently given serious consideration to the rather drastic medical measures suggested by earlier writers but personally felt that there were real limitations to lengthening the human life span. He described his attitude in this manner (11):

> But after all, I am of opinion, that the greatest efforts of the human mind to extend a vigorous longevity much beyond fourscore, will generally prove ineffectual; and that neither the total alteration and discharge of old distempered humours, by a course of resolvent medicine, nor the substitution of fresh vital juices in their room, prescribed by the great Lord Verulam and Boerhaave; nor the transfusion of young blood into old veins, tho' performed with the utmost precaution and dexterity, will ever avail to bestow strength and vigour on the bulk of mankind, for any great number of years, beyond the limits marked out by the Psalmist, and much less to produce rejuvenascency. Tho' I am persuaded, at the same time, that these methods prosecuted to accuracy, and reduced, if possible, to a general and easy practice, would make the life of man hold out, free from the usual complaints of decrepitude, longer than it does at present, since we see every day, that an extraordinary strength of constitution, managed with common prudence, often exceeds an hundred years.
>
> Let us in the mean time make the best use of those advantages which we can easily compass. Let us, by a virtuous course of life, and by the practice of such rules as the experience of ages has established, endeavour to preserve health of body and soundness of mind, until we arrive at the boundaries which providence (unless we are our own enemies) seems to have nearly marked out for our respective constitutions. And then let us chearfully submit to have the curtain drawn for a little while between our friends and us; and be ready and willing to enter into that happy state for which we were originally intended, and where we shall be secure from the approach of age and infirmities.

HUFELAND

One of the most frequently quoted early works in the field of geriatrics was published by Christoph Wilhelm Hufeland (1762–1836) in 1796. Hufeland was an excellent German physician-philosopher and medical writer. *Hufeland's Art of Prolonging Life* (12) presented objective criticism of much that had been published previously and served as an impetus to the publication of more science and less speculation in the years ahead. His term "macrobiotic," or the art by which life could be prolonged, was used by several writers who followed him but the term was never generally accepted by the medical profession. In the preface to this fascinating book the author indicated his hope that the book would be brought to the attention of young people because "I am convinced that the grounds of a long or a short life can be most effectually laid at an early period; and that, through unpardonable negligence in the education of youth, information on this subject, so important to their physical happiness, is entirely forgotten."

Hufeland paid respect to the great Roger Bacon whose genius embraced every branch of science and who first pointed out to the human mind, which had long wandered amidst error, the path to conduct it back to truth. Bacon had thought the question respecting the prolongation of life worthy of his attention and researches and presented ideas bold and new for the time in which he lived.

Hufeland joined the rank of others who had written concerning the danger of consuming too much food and said (12): "It is at any rate certain, that the prolongation of life does not so much depend on the quality, as on the quantity of our nourishment; and the instance of Cornaro affords an astonishing proof how a man of weakly constitution may thereby pro-

long his existence. It may with truth be asserted, that the greater part of mankind eat more than is necessary; and by being crammed and over-fed in infancy, we are deprived of what natural sensation which ought to tell us when we have enough."

His discussion of diet was rather general, and the following summarizes his major suggestions.

> I shall here only give such common rules in regard to eating and drinking as will suit the generality of mankind; and which, I am convinced, will have an essential influence in prolonging life.
>
> 1. Eat slowly.
> 2. Preserve the teeth, never eat sugar, and avoid confectionery.
> 3. Beware of studying, reading or straining the head while at table. . . Laughter is one of the greatest helps to digestion with which I am acquainted; endeavour to have cheerful and merry companions at your meals.
> 4. Do not exercise soon after meals.
> 5. Never eat so much that you feel you have a stomach.
> 6. Choose vegetables in large quantity and limit the amount of meat eaten, particularly in warm weather.
> 7. Eat sparingly at night and not too late before retiring.
> 8. Use a sufficient amount of fluids, especially fresh water, being careful not to drink fluid until about one hour after a meal.

Hufeland's dietary suggestions embody the concept of moderation throughout.

REFERENCES

(1) Works of Hippocrates: On ancient medicine. *In* Medical Classics. Vol. 3. Baltimore: Williams & Wilkins Co. 1938.

(2) BACON, R.: The Cure of Old Age and Preservation of Youth. Trans. by R. Browne. London: Tho. Flesher & Edward Evets, 1683.

(3) CORNARO, L.: The Art of Living Long. Milwaukee: William F. Butler, 1918.

(4) CORNARO, L.: Discourses on the Sober Life (Discorsi della Vita Sobria) Being the Personal Narrative of Luigi Cornaro. New York: Thomas Y. Crowell Co., 1916.

(5) ELYOT, T.: The Castel of Health. London: Thomas Marshe, 1561.

(6) COGAN, T.: The Haven of Health. London: Welch, Bradwood for John Norton, 1612.

(7) BACON, F.: History Natural and Experimental of Life and Death or Of the Prolongation of Life. London: William Lee, 1664.

(8) TRYON, T.: Way to Health, Long Life and Happiness. London: Andrew Soule, 1683.

(9) FLOYER, J.: Medicina Gerocomica or, The Galenic Art of Preserving Old Men's Healths, Explain'd in Twenty Chapters. London: F. Isted, 1724.

(10) CHEYNE, G.: An Essay of Health and Long Life. London: George Strahan, 1725.

(11) MACKENZIE, J.: The History of Health and the Art of Preserving It. 2nd ed. Edinburgh: Wm. Gordon, 1759.

(12) HUFELAND, C. W.: Hufeland's Art of Prolonging Life. E. Wilson, ed. Philadelphia: Lindsay & Blakiston, 1867.

Travel Dates for the 35th Annual A.D.A. Meeting

By Air

BETWEEN **Twin Cities** AND	ROUND TRIP AIR COACH	ROUND TRIP REGULAR FLIGHT	TIME
Chicago	$ 37.00	$ 44.20	1 hr. 35 min.
Dallas	—	118.70	7 hr. 13 min.
Jacksonville	109.00	153.10	7 hr. 39 min.
Los Angeles	189.00	209.90	8 hr. 10 min.
New Orleans	—	143.30	7 hr. 45 min.
New York	95.40	117.10	3 hr. 50 min.
San Francisco	189.00	218.30	9 hr. 50 min.
Seattle	143.70	186.70	5 hr. 55 min.
Washington, D. C.	86.40	108.00	3 hr. 34 min.

The Wold-Chamberlain Field serves both Minneapolis and St. Paul.

By Rail

BETWEEN **Twin Cities** AND	ROUND TRIP FIRST CLASS	PULLMAN LOWER	TIME
Chicago	$ 23.75	$ 9.40	6 hr. 45 min.
Dallas	57.45	20.10	20 hr. 20 min.
Jacksonville	90.10	25.20	37 hr.
Los Angeles	114.25	36.50	52 hr. 50 min.
New Orleans	75.25	21.90	26 hr. 30 min.
New York	97.35	21.30	26 hr. 45 min.
San Francisco	114.25	36.50	53 hr. 50 min.
Seattle	95.70	31.50	37 hr. 30 min.
Washington, D. C.	85.85	20.10	26 hr. 15 min.

All fares subject to 15 per cent Federal Transportation Tax.

Iron Requirement of Six Young Women[1]

FRANCES A. JOHNSTON, Ph.D., and THELMA J. McMILLAN, Ph.D.[2]

With the Assistance of Gladys Derby Falconer and Erica Evans

New York State College of Home Economics and The School of Nutrition, Cornell University, Ithaca

THE amount of iron needed in the diet of women is determined by finding the dietary amount from which enough iron is retained to cover all losses. The magnitude of the menstrual loss of iron is a large factor in determining the requirement, because the loss in the menses is the largest loss of retained iron. Because the menstrual losses of women vary widely, many individual cases need to be studied to arrive at a value for dietary iron which can be recommended as adequate for all women. The present study contributes six more cases to those already accumulated.

PROCEDURE

The subjects were six college women twenty through thirty-one years of age weighing from 5.12 to 57.0 kg. and judged by a physical examination to be in good health. A dietary history indicated that they should have had normal stores of iron, and the blood of all contained a normal concentration of hemoglobin and a normal number of red blood cells.

The subjects lived on a carefully controlled diet for twelve weeks. In lieu of an adjustment period, they were asked to select their food during the week preceding the experiment to approximate the nutritive value of the basal diet. The basal diet was served for four weeks (Period I), then for the next eight weeks a 120-gm. serving of spinach was added each day. During the first half of the eight weeks (Period II), the spinach was eaten for breakfast, and during the other half of the time (Period III), it was eaten in the evening meal. The basal diet was made up of a wide variety of common foods. A detailed description of the diet and the method of collecting and analyzing the food and feces will be found in a previous report by McMillan and Johnston (1).

Analyses for iron were made on the feces, urine, menses, and duplicates of the food. Aliquot portions of daily food slurries were pooled for each week. The feces, which were marked by carmine given at the first breakfast of each week, were made into weekly composites. The daily urine samples were made to a volume of 1800 ml. with enough hydrochloric acid included to bring the final solution to a concentration of 2 per cent; an aliquot portion was used to make a weekly composite. Samples of urine were ashed in vitreosil dishes at 500°C. for 20 hr. The ash was wetted with water, the water evaporated, and the samples re-ashed for 20 hr. more. The ash was then heated with hydrochloric acid to hydrolyze the pyrophosphates to orthophosphates. Although wet-ashing had been used for the food and feces, a dry-ashing procedure was used for the urine, because Morczek (2) had found that when urine samples were wet-ashed, the concentration of salts was increased to such an extent as to interfere with the determination of iron. Even for dry-ashed samples, he found the effect of the salts in urine so great that a dilute solution had to be used. For that reason, in the present study, the ash was diluted to the original urine volume and then diluted 50 per cent more with water and reagents in making the iron determination. The resulting color was so dilute that it had to be read in a colorimeter[3] constructed so that the light passed through the length rather than the width of the tube of solution. The 1, 10-phenanthroline method of Saywell and Cunningham (3) was used for the determination of iron.

Collections were made of all tampons used in four successive menstrual periods, even though four periods did not occur for all subjects during the twelve weeks of the experiment. This was done because the variability in the iron content of the menses from period to period for a given woman is wide and at least four periods are necessary to obtain a mean which is representative. The tampons were

[1] Received for publication February 14, 1952.

[2] Present address: School of Home Economics, Oregon State College, Corvallis.

[3] The authors wish to thank the U. S. Plant Soil and Nutrition Laboratory, Ithaca, New York, for the use of an especially constructed colorimeter.

TABLE 1

Mean daily iron intake, excretion, and retention during three twenty-eight-day periods

SUBJECT	IRON			
	In food	In feces	In urine	Retention
	Period I*			
	mg.	*mg.*	*mg.*	*mg.*
D. C.	6.40	5.71	0.22	0.47
J. M.	6.34	5.75	0.19	0.40
B. M.	6.44	5.86	0.20	0.38
L. O.	6.49	5.44	0.22	0.83
J. S.	6.41	5.71	0.18	0.52
Mean.....	6.42			0.52
	Period II			
D. D.	11.61	9.28	0.21	2.12
D. C.	11.49	10.21	0.24	1.04
J. M.	11.41	10.05	0.16	1.20
B. M.	11.55	10.12	0.22	1.21
L. O.	11.56	10.04	0.26	1.26
J. S.	11.47	9.91	0.20	1.36
Mean.....	11.52			1.36
	Period III*			
D. D.	11.60	9.85	0.20	1.55
D. C.	11.48	10.26	0.22	1.00
B. M.	11.54	9.58	0.20	1.76
L. O.	11.53	10.94	0.29	0.30
J. S.	11.46	9.70	0.18	1.58
Mean.....	11.52			1.24

* Values for the iron content of the stools for one week in Period I for Subject D. D. and for Period III for Subject J. M. were so high as to be atypical. Therefore, all values for the respective periods have been omitted. The omitted values have been reported by McMillan and Johnston (1).

soaked in cold water and heated with hydrochloric acid until reduced to fine particles. Aliquot portions of the resulting slurry were wet-ashed with nitric and sulphuric acids and iron determined by the thiocyanate method of Stugart (4).

RESULTS AND DISCUSSION

On a mean intake of 6.42 mg. iron per day, the amount retained by five subjects ranged from 0.38 to 0.83 mg. (Table 1). Reference to Table 2 shows that the subject with the greatest need for iron to replace menstrual losses needed 0.49 mg. per day. That same subject retained 0.52 mg. The retention was too small as no iron would be available to replace small losses of iron which occur from hair, sloughed off skin cells, perspiration, and so on. This subject (J. S.) was, therefore, not retaining enough on the lower level of intake. Subjects B. M. and D. C. also retained too little for a margin of safety which would include enough for replacement of the small losses. Subject L. O. retained enough for a safe margin. Although no estimate of the daily need for replacement was made for J. M., the loss per period was so small that the 0.40 mg. she retained was undoubtedly enough. For Subject D. D., retention values are omitted from Period I, Table 1 because during one week of the four the loss of iron was atypical. Because the amount retained in the other three weeks was similar to that of other subjects and because the amount she needed for replacement was very small, she would likely retain enough under normal circumstances for the replacement of menstrual iron.

In a previous study in this laboratory by Johnston, Frenchman, and Boroughs (5) of five college women, the amount retained from a similar intake was similar, but the menstrual losses were greater. In a review of the literature made by Frenchman and Johnston (6) on menstrual losses, only 50 women in a total of 185 were found to require a retention of less than 0.4 mg. per day; in the present study only one of the six subjects required more than 0.4 mg. per

TABLE 2

Daily retention of iron required to replace menstrual losses

SUBJECT	IRON LOSS IN MENSTRUAL PERIODS					MEAN CYCLE LENGTH	DAILY IRON RETENTION NEEDED FOR REPLACEMENT	RETENTION ON 6.42 MG. DIETARY IRON	RETENTION ON 11.52 MG. DIETARY IRON
	I	II	III	IV	Mean				
	mg.	*mg.*	*mg.*	*mg.*	*mg.*	*days*	*mg.*	*mg.*	*mg.*
D. D.	3.86	2.98	4.16	8.72	4.93	23	0.21	—‡	1.84
D. C.	10.59	9.38	12.10	8.68	10.19	29	0.35	0.47	1.02
J. M.	5.71	4.72	5.85	3.14	4.86	—*	—†	0.40	1.20
B. M.	6.70	10.21	9.15	5.56	7.90	28	0.28	0.38	1.48
L. O.	6.02	7.94	9.61	6.82	7.60	31	0.24	0.83	0.78
J. S.	11.92	7.89	16.30	18.49	13.65	28	0.49	0.52	1.47

* The intervals between periods for Subject J. M. were irregular. Therefore, no estimate was made for the mean cycle length.

† No estimate because no value was obtained for the mean length of cycle.

‡ Value omitted because of atypical high excretion in stools during one week on this intake.

day. Although the menstrual replacement needs of these six women were low, only three retained enough on an intake of 6.41 mg. iron per day.

During the second and third periods, the iron content of the diet was increased by 5.04 mg. per day by the addition of a 120-gm. serving of spinach each day. McMillan and Johnston (1) have shown that the percentage of iron absorbed from the spinach was similar to that from a diet containing a wide variety of foods and that the total absorption of iron during the second and third periods was typical for a mixed diet without spinach, but of similar iron content. The mean amount retained in Periods II and III from the 11.52 mg. iron in the diet was 1.36 and 1.24 mg., respectively. This was much more than any of the six subjects needed.

For 86 per cent of the 185 women for whom data on menstrual losses have been reported in the literature (6), a retention of 1.2 mg. iron per day would cover the replacement needs. In the present study, three of the six subjects over the entire eight-week interval (a fourth for a four-week interval) on a daily intake of 11.52 mg. iron retained 1.2 mg. or more, while requiring from 0.21 to 0.49 mg. to replace menstrual losses. When both the individual variations in absorption and in menstrual needs are taken into account, plus the additional needs for the minor losses, the dietary allowance of 12 mg. recommended by the Food and Nutrition Board (7) seems adequate to supply generously the needs of the majority and to cover adequately the needs of all but a very few.

SUMMARY

Six college women lived on a carefully controlled diet for twelve weeks. Iron determinations were made on duplicates of the diet and on the feces, urine, and menses.

The mean loss of iron for four menstrual periods ranged from 4.86 to 13.65 mg., and the amount needed for daily replacement ranged from 0.21 to 0.49 mg.

On a mean intake of 6.42 mg. per day during four weeks, three subjects did not retain enough iron to cover their menstrual losses plus a margin of safety which would include enough to cover small losses in hair, skin-cells, perspiration, and so on. On a mean intake of 11.52 mg. during eight weeks, all six subjects retained enough iron to cover all of their needs.

REFERENCES

(1) McMillan, T. J., and Johnston, F. A.: The absorption of iron from spinach by six young women, and the effect of beef upon the absorption. J. Nutrition 44: 383, 1951.

(2) Morczek, A.: Untersuchungen über den Eisenstoffwechsel. 1. Die renale Eisenausscheidung unter physiologischen Verhältnissen. Deutsche Ztschr. Verdauungskr. 10: 148, 1950.

(3) Saywell, L. G., and Cunningham, B. B.: Determination of iron. Colorimetric *o*-phenanthroline method. Indust. & Engin. Chem., Anal. Ed. 9: 67, 1937.

(4) Stugart, R.: Determination of iron in milk and other biological materials. Indust. & Engin. Chem., Anal. Ed. 3: 390, 1931.

(5) Johnston, F. A., Frenchman, R., and Boroughs, E. D.: The iron metabolism of young women on two levels of intake. J. Nutrition 38: 479, 1949.

(6) Frenchman, R., and Johnston, F. A.: Relation of menstrual losses to iron requirement. J. Am. Dietet. A. 25: 217, 1949.

(7) Food and Nutrition Board: Recommended Dietary Allowances, Revised. National Research Council Rep. & Circ. Series No. 129, October, 1948.

Anorexia Nervosa in Children

Anorexia nervosa does not usually occur in early infancy, but commonly first becomes manifest in children from three to five years of age. In this age period the child is characteristically negativistic, and efforts to force him to eat bring forth a stubborn response. This is often accompanied by a strong nervous element, and such a child is usually more highstrung than phlegmatic. Transitory periods of poor appetite are not rare in childhood, and should food be forced at such a time a chronic feeding problem may develop. Many children develop poor feeding habits as a means of gaining attention; combining poor appetite with forced vomiting, they may become little tyrants and dominate the home. As this habit usually develops at the time when the child is losing infantile chubbiness and is acquiring the more linear physique of childhood, the parents often fear that malnutrition is setting in.

The introspective or day-dreaming child often dawdles over his food, while the extrovert may be so active that he devotes little time to eating. Management of these cases consists of removing environmental factors that are likely to induce anxiety or tension in the child. If the parents are unable to assume an attitude of unconcern, the difficulty may often be surmounted by placing the child in the care of a calm relative or stranger who will not be intimidated; this is true particularly in cases in which the child is attempting to dominate the parents. When there is a considerable nervous factor, a mild bromide or barbiturate sedative, or a combination of the two, may overcome it and the anorexia. Vitamin B preparations have been tried; however, as with other so-called tonics, their specificity is doubtful. Time and patience are usually the greatest aids in overcoming this problem.—*From Queries and Minor Notes, J.A.M.A. 149: 314 (May 17), 1952.*

Yield and Quality of Cooked Edible Portion of Smoked Hams[1]

LUCY M. ALEXANDER and O. G. HANKINS[2]

Bureau of Human Nutrition and Home Economics and Bureau of Animal Industry, Agricultural Research Administration, U. S. Department of Agriculture, Washington, D. C.

THIS paper is the fourth of a series of reports (1–3) on the yield of cooked edible portions obtained from poultry and various meats. Results of a survey of farm meat curing (4) showed that of the farmers in the United States who cure meat, 79 per cent use dry-curing methods. Presented here are data on yield of cooked meat (including muscle and intermuscular fat), external fat, skin, bone, and inedible trimmings obtained from dry-cured hams which had been stored under farm home conditions. For these and for commercially-cured hams, data are given on shrinkage and cooking time and on tenderness and juiciness of the cooked meat.

EXPERIMENTAL PROCEDURE

Twenty-three of the twenty-nine hams used in this study were dry-cured by the Bureau of Animal Industry (5). The curing mixture consisted of 8 lb. salt, 2 lb. brown sugar, and 4 oz. saltpeter for each 100 lb. meat. The meat was cured at a temperature of about 38°F., with three days' curing time allowed for each pound of the average ham. The cured hams were washed and smoked for three days at a temperture that did not exceed 110°F. The hams were wrapped or packed, and stored by various methods suitable for the farm home, eighteen for 205 days and five for 364 days. The hams were weighed fresh, after curing, after smoking, and after storage. Six commercially-cured hams, including two "tenderized," were obtained on Washington, D. C. markets.

In this investigation eighteen dry-cured hams used in the study of yield were cooked by baking (6). Before baking, the hams were weighed, soaked overnight in water to cover at room temperature, drained, and weighed again. They were placed skin side up on racks in uncovered pans and baked in ovens heated to 125°C. (257°F.) until a meat thermometer registered 76°C. (167°F.) at the center of each ham. The hams were removed from the ovens and weighed, then allowed to stand at room temperature until they reached maximum temperature at the center. Cooking time was recorded. After cooling overnight at room temperature, the baked hams were weighed and then separated into skin, external fat, muscle with intermuscular fat, bones, and hard dry inedible trimmings. These portions were weighed.

The remaining five dry-cured hams were simmered in water to cover until a meat thermometer registered 76°C. (167° F.) at the center; these hams were then cooled in the broth overnight (6).

The commercially-cured hams were baked as described for the eighteen dry-cured hams, but without the previous soaking in water.

After the dry-cured hams were cooled following cooking, they were sampled (biceps femoris and semimembranosus muscles) and judged for palatability according to a standard method (6) by five to nine staff members of the Bureaus of Animal Industry, Human Nutrition and Home Economics, and Agricultural Economics[3]. Three of the commercially-cured hams were judged (biceps femoris muscle) while hot by eleven staff members of the Bureaus of Human Nutrition and Home Economics and Agricultural Economics[3]; the remaining three hams were not judged for palatability, but were used in determining cooking time. The judges' reports on tenderness and on quantity of juice were pooled for each lot of hams; the numbers in the different descriptive categories were calculated as percentages of the total samples rated. Average scores were calculated.

The dry-cured hams were also tested for tenderness

[1] Received for publication February 8, 1952.

[2] The writers are indebted to: Kenneth F. Warner, formerly of the Bureau of Animal Industry, for boning some of the cooked hams and determining their tenderness by the shear test; Nancy Griswold Clark and Elizabeth A. Engstrom, also formerly of the Bureau of Animal Industry, and Jessie C. Lamb and Grace E. Schopmeyer of the Bureau of Human Nutrition and Home Economics for assistance in cooking the hams and in assembling the data.

[3] Livestock, Meats, and Wool Division, Bureau of Agricultural Economics—now the Livestock Branch of the Production and Marketing Administration.

by the mechanical shear (6). For each lot tested, the average number of pounds of force required to shear was calculated.

RESULTS AND DISCUSSION

Cooking Time and Temperature

The number of minutes per pound required to bake the hams to 76°C. (167°F.) appeared to be influenced by three factors: the plumpness or thickness of the fleshiest part (6), the dryness, and the initial temperature. In thickness, three of the commercially-cured hams measured from $4\frac{1}{2}$ to 5 in., and the eighteen dry-cured hams (stored for 205 days) from $3\frac{1}{8}$ to $4\frac{3}{4}$ in. As to dryness, it may be inferred that all of the commercially-cured hams were less dry than the dry-cured stored ones, on the basis of a published report (7) of 67.03 per cent moisture in packers' type hams and 46.22 per cent in standard-cured Maryland hams aged eight months. Initial temperature varied in the different lots of hams, averaging 9°C. (48°F.) for three of the commercially-cured hams, 25°C. (77°F.) for the other three of this kind, and 19°C. (66°F.) for the dry-cured ones. Cooking time, on the average, was: for the commercially-cured hams (which were plumper and more moist than the dry-cured ones), 39 and 32 min. per pound, respectively, when the initial temperature was 9°C. (48°F.), and 25°C. (77°F.); and for the dry-cured hams with an initial temperature 19°C. (66°F.), 26 min. per pound.

The five dry-cured hams, stored for 364 days, were $3\frac{1}{2}$ to 4 in. thick, of unrecorded initial temperature, and when simmered in water required on the average, 22 min. per pound to cook to 76°C. (167°F.).

The temperature at the center of the hams continued to rise slowly after they were removed from the stove. The increase in temperature was, on the average, 3°C. (5°F.) for eighteen dry-cured and two commercially-cured hams that were baked, and 10°C. (18°F.), average, for the five simmered hams cooled in the broth. The time required for the temperature at the center of the ham to reach its maximum was from 2 to 3 min. per pound for the baked hams, and 9 min. per pound for the simmered ones.

Shrinkage and Yield

The longer the dry-cured hams were stored, the more weight they lost (Table 1), as would be expected; when calculated as percentage of fresh weight, the losses were, respectively, 26 and 32 per cent for 205 and 364 days of storage. During baking, the eighteen dry-cured, stored hams (Table 1) shrank, on the average, 16 per cent of their weights before cooking, and two of the three commercially-cured hams, 22 per cent. This result indicated that when the hams were baked as described, cooking shrinkage was directly associated with moisture content of the raw ham. The commercially-cured hams shrank more than the 12.28 per cent reported (8) for twelve sweet-pickle-cured, high-grade commercial hams, and likewise more than the 15.06 per cent (9) for an unstated number of tenderized commercial hams, all of which were baked, uncovered, at 121°C. (250°F.), to 70°C.

TABLE 1

Average weights of hams before and after cooking and yields of edible portions and refuse

DESCRIPTION OF HAMS AND COOKING METHODS	NUMBER OF HAMS	AVERAGE WEIGHT OF HAMS					AVERAGE YIELDS OF COOKED HAMS				
							Edible portions		Refuse		
		Fresh	Cured	Smoked	Stored	Cooked	Meat*	External fat	Skin	Bones	Inedible trimmings
		lb.	*lb.*	*lb.*	*lb.*	*lb.*	*lb.*	*lb.*	*lb.*	*lb.*	*lb.*
Dry cured, smoked, farm home conditions											
Stored for 205 days; baked, uncovered, at 125°C. (257°F.) to 76°C. (167°F.)	18	16.90	15.58	14.86	12.53	10.48†	5.26	2.86	0.43	1.23	0.65
Stored for 364 days; simmered, in water to cover, to 76°C. (167°F.); cooled overnight in broth	5	15.80	14.80	13.56	10.70	—	—	—	—	—	—
Commercial cure											
Nontenderized; baked, uncovered, at 125°C. (257°F.) to 76°C. (167°F).	1	—	—	—	11.41‡	8.86	—	—	—	—	—
Tenderized; baked, uncovered, at 125°C. (257°F.) to 76°C. (167°F.)	2	—	—	—	11.10‡	8.73	—	—	—	—	—

* Includes muscle and intermuscular fat.

† After cooling overnight at room temperature.

‡ Weight before cooking; previous history not known.

(158°F.). The greater shrinkage in the present study was probably due in part to our cooking the hams to the higher internal meat temperature of 76°C. (167°F.).

The yield of cooked edible portions—meat (including muscle and intermuscular fat) and external fat—from the eighteen baked, dry-cured hams (Table 1) was, on the average, 77 per cent of the weight cooked, a figure somewhat smaller than the 82.11 per cent reported (9) for eight tenderized commercial hams. The yield of cooked meat from the baked dry-cured hams was, on the average, 43 per cent of the weight before cooking, and 50 per cent of the weight after cooking. The yield of cooked external fat, when calculated as percentage of the weight of the baked dry-cured hams, respectively, raw and cooked, averaged 23 and 27 per cent. Although yields were not determined on the five simmered, dry-cured hams (Table 1), there was considerable loss due to water-logged inedible trimmings.

Tenderness and Quantity of Juice

For the dry-cured hams, whether baked or simmered, the biceps femoris muscle was reported by the judges to be more tender than the semimembranosus (Table 2). Within these two groups of dry-cured hams, the differences in muscles as measured by organoleptic tests were confirmed by the shearing tests. For example, the force required to shear biceps femoris and semimembranosus muscles of the baked dry-cured hams was on the average, 24 and 45 lb. respectively. The simmered hams required, respectively, on the average, 15 and 29 lb. to shear biceps femoris and semimembranosus muscles. The semimembranosus of the simmered hams was extremely difficult to sample for the shearing test because of the stringiness and the water-logging of this muscle; therefore, the value of 29 lb. reported for three tests may not be strictly representative. The baked, tenderized hams were the most tender when the four lots of hams were compared on the basis of the biceps femoris (Table 2).

TABLE 2

Tenderness and quantity of juice of cooked smoked hams as indicated by organoleptic tests

DESCRIPTION OF HAMS AND COOKING METHODS	NUMBER OF HAMS	PORTION OF HAM	NUMBER OF SAMPLES JUDGED	PROPORTION OF SAMPLES CODED AS							AVERAGE SCORE
				7	6	5	4	3	2	1	
Tenderness*											
				%	%	%	%	%	%	%	
Dry cured, smoked											
Stored for 205 days, farm home conditions; baked, uncovered, at 125°C. (257°F.) to 76°C. (167°F.)	18	Biceps femoris†	141	9	39	43	5	3	1	0	5.4
		Semimembranosus†	119	4	18	40	17	19	2	0	4.7
Stored for 364 days, farm home conditions; simmered, in water to cover, to 76°C. (167°F.); cooled overnight in broth	4	Biceps femoris†	20	10	45	35	10	0	0	0	5.6
		Semimembranosus†	20	0	0	50	20	25	5	0	4.2
Commercial cure											
Nontenderized; baked, uncovered, at 125°C. (257°F.) to 76°C. (167°F.)	1	Biceps femoris‡	11	18	46	27	0	9	0	0	5.6
Tenderized; baked, uncovered, at 125°C. (257°F.) to 76°C. (167°F.)	2	Biceps femoris‡	22	27	37	27	9	0	0	0	5.8
Quantity of Juice ⁂											
Dry cured, smoked, stored for 364 days, farm home conditions; simmered, in water to cover, to 76°C. (167°F.); cooled overnight in broth	4	Biceps femoris†	20	0	5	15	60	10	10	0	4.0
		Semimembranosus†	20	0	0	10	10	70	0	10	3.1
Commercial cure											
Nontenderized; baked, uncovered, at 125°C. (257°F.) to 76°C. (167°F.)	1	Biceps femoris‡	11	9	0	27	46	18	0	0	4.4
Tenderized; baked, uncovered, at 125°C. (257°F.) to 76°C. (167°F.)	2	Biceps femoris‡	22	0	41	45	9	5	0	0	5.2

* Key to code: 7—very tender; 6—tender; 5—moderately tender; 4—slightly tough; 3—tough; 2—very tough; 1—extremely tough.

† Judged at room temperature.

‡ Judged hot.

⁂ Key to code: 7—very juicy; 6—juicy; 5—moderately juicy; 4—slightly dry; 3—dry; 2—very dry; 1—extremely dry.

The quantity of juice was rated higher for the biceps femoris than for the semimembranosus of the simmered, dry-cured hams (Table 2). For these hams, a direct association was shown between quantity of juice and tenderness of the two muscles judged. Similarly, the samples of biceps femoris of the tenderized hams were the juiciest as well as the most tender for the three lots of hams judged on both factors.

SUMMARY AND CONCLUSIONS

Twenty-three hams were dry-cured, smoked, and stored under farm home conditions and weighed at each step. Eighteen, after being stored for 205 days, were soaked overnight in water to cover, drained, and baked at the low oven temperature of 125°C. (257°F.), until a meat thermometer registered 76°C. (167°F.) at the center of each ham. They were then cooled, weighed, and separated into meat (including muscle and intermuscular fat), external fat, skin, bone, and inedible trimmings. These portions were weighed, and the meat tested for tenderness. Five of the dry-cured hams were stored for 364 days, then simmered in water to 76°C. (167°F.), cooled overnight in the broth, and four of them tested for tenderness and juiciness. Six commercially-cured hams, including two "tenderized," from Washington, D. C. markets were baked to 76°C. (167°F.) at 125°C. (257°F.); three were tested for tenderness and juiciness. Cooking time was recorded for all hams.

The number of minutes per pound required to bake the hams to 76°C. (167°F.) appeared to be influenced by the thickness of the fleshiest part, the dryness, and the initial temperature. Yield of cooked meat (including muscle and intermuscular fat) averaged 50 per cent and yield of cooked external fat, 27 per cent of the weight of the baked, dry-cured hams. The biceps femoris of the baked tenderized hams was the most tender and juicy, and the semimembranosus of the simmered dry-cured hams the driest and least tender.

REFERENCES

(1) Alexander, L. M., Schopmeyer, G. E., and Marsden, S. J.: Yield of cooked edible portion of young roasted turkey. Poultry Sci. 27: 579, 1948.

(2) Alexander, L. M., and Schopmeyer, G. E.: Yield of edible portion of chicken and various meats cooked by different home methods. Food Technol. 3: 263, 1949.

(3) Alexander, L. M., Schopmeyer, G. E., Lamb, J. C., and Marsden, S. J.: Yield of cooked edible portion of turkey according to sex, age, fatness, and breast type. Poultry Sci. 30: 187, 1951.

(4) Dunker, C. F., and Hankins, O. G.: A Survey of Farm Meat-Curing Methods. U.S.D.A. Circ. No. 894, 1951.

(5) Hiner, R. L.: Hams stored in tight cloth bags keep well for use in farm home. U.S.D.A. Yearbook of Agriculture, 1935, p. 230.

(6) Bureau of Home Economics and Bureau of Animal Industry: Methods of cooking and testing meat for palatability. Supp. to Natl. Proj. Coop. Meat Investigations (Revised) [Mimeographed], 1933.

(7) Hunt, W. E., Supplee, W. C., Meade, DeV., and Carmichael, B. E.: Qualities of Hams and Rapidity of Aging as Affected by Curing and Aging Conditions and Processes. Md. Agric. Exper. Sta. Bull. No. 428, 1939.

(8) Child, A. M.: Selection and Use of Pork Cuts. Minn. Agric. Exper. Sta. Bull. No. 254, 1929.

(9) Staggs, R., and Cline, J. A.: The effect of three different constant oven temperatures upon the palatability and cooking losses of four brands of commercially cured hams. Rept. of Review Committee, Conference on Cooperative Meat Investigations 4: 717, 1942.

The Frozen Orange Juice Concentrate Industry

Frozen orange concentrates, the six-year-old wonder, represent one-third of all frozen food sales. Phenomenally successful ever since its beginning, the frozen orange concentrate industry has had just one fault, succinctly summed up by one of its men: "The more we sell, the more we lose."

Until January 1952, the companies operated mostly for the profit of Florida orange growers. But in that month the bottom dropped out of their market. The constantly increasing price of Florida oranges fell of its own weight, the collapse precipitated by underestimation of the crop late in the spring of 1951. Growers were losing 20 cents on every box of oranges they sold.

When the boom started, price didn't make much difference. Demand had not yet been created by advertising, and those who wanted the concentrates were glad to get them, because fresh fruits were seasonal and canned juice was less palatable. By the next year, prices everywhere were coming down, but not until 1950 was the pinch really felt. Prices had reached a new high, increases could no longer be passed on to the consumer, and competition was growing by price-cutting of minor brands. Leaders in the field, refusing to lower standards, were hurt worst.

Stabilization of the price of Florida fruit is the goal of frozen orange concentrate manufacturers. With that, sales will probably keep growing—but the industry has just begun to get the "feel" of the product. Experimentation is now going on, however, to find a concentrate which will not need to be frozen. This will solve the freezer space problem, as well as give the top companies an opportunity to "get in on the ground floor."

Once fruit prices are stabilized, industry can turn to merchandising as a full-time job. Then the presence or lack of smart merchandising will determine whether the industry makes money.—*Abstracted from: Troubles in Frozen Orange Juice. Fortune 45: 102 (March), 1952.*

Current Comment

DIETARY NOMENCLATURE[1]

CORINNE H. ROBINSON

Chairman, Diet Therapy Section, The American Dietetic Association

Dietetic terminology, in a very real sense, is a measure of our professional progress. Moreover, our use of words is a yardstick by which others can and do understand or misunderstand us. When dietetics was a new profession and when our work was comparatively limited in scope, there was probably no great difficulty in understanding one another. However, as a result of our rapid growth, both in numbers and in professional activities, we find that we don't always "speak the same language."

We would agree, I am sure, that many problems which confront dietitians, allied professional workers, and the layman would be simplified if we could always understand as well as be understood. Therapeutic dietitians are especially concerned with the proper naming of diets. In a given hospital the dietitian, nurse, physician, administrator, and layman can usually come to mutual understanding. But, the individual who changes locale finds that he or she must adapt to new methods, new customs, and thus to new terms. Dr. Black's diet in Hospital A is not used in Hospital B; in its place is Dr. Brown's diet. In other words, it is important for us to speak the same language whether it be in Boston, Madison, New Orleans, or Seattle; it is important for us to speak the same language in South, West, or North Philadelphia. When we have learned to do this in a dietetic sense, we will have achieved a noteworthy step in simplifying and unifying dietary regimens, without sacrifice of individuality which must be preserved in each situation.

PROBLEMS OF DIETARY NOMENCLATURE

To determine the nature of the problems relating to the naming of diets, twelve diet manuals from the Lulu G. Graves Memorial Library of The American Dietetic Association were studied. These manuals were published between 1948 and 1951; thus they may be expected to reflect current practices in diet therapy. They provided ample evidence that dietary nomenclature is improving and that dietitians are alert to some of the problems. Any examples which I shall cite are not intended as criticism of individual manuals, but are rather part of the larger problem which confronts all who are interested in improving dietetic word usage.

Probably the major obstacle in arriving at a satisfactory name for a diet is the lack of complete information concerning food values and the behavior of foods in the body. The restricted sodium diet, currently so popular, is an instance where information on food values is incomplete or not widely appreciated, and where the literature is expanding so rapidly that many have not had an opportunity to keep abreast of change. Present nomenclature is confusing, to say the least.

LOW-SODIUM DIET

Several diets in the manuals are referred to as "salt-free," "low-salt," or "extreme salt restriction." The term "salt-free" should be discouraged since, in a strict sense, no diet can be said to be entirely free of salt. Likewise, the word "salt" is inadvisable since this might conceivably result in overlooking other important sources of sodium. We now know that we must consider not only the salt used in the processing and cooking of foods, but that we must also choose foods carefully with respect to their natural content of sodium. Furthermore, we must be aware of the many uses of sodium-containing products other than sodium chloride either in processing or in cooking.

As long as the words "salt" and "sodium" are both used, salt and sodium values may be confused. In fact, in one manual values were stated to be for sodium, although the description of the diet and the recalculation of the sodium content made it clearly evident that the values had been given for sodium chloride, not sodium. This resulted in an overestimation by 150 per cent. Now that the flame photometer has become available in many laboratories, criteria for these diets will be based on sodium values rather than on the older determinations for chloride.

DIETS FOR GASTROINTESTINAL DISEASE

Perhaps no dietary regimen varied more widely in the manuals studied than that used for gastrointestinal diseases. Although the objectives and basic principles were similar in all of the diets described, the actual practices and thus the nomenclature were confusing to all who might work in more than one hospital. For example, the term "modified Sippy diet" was used in five manuals, but it did not mean at all the same thing in all five situations. One manual described a dietary progression planned to

[1] Presented at the 34th Annual Meeting of The American Dietetic Association in Cleveland, on October 11, 1951.

cover a period of a week with a liberal choice of foods; at the end of this time, a bland diet in its most liberal sense was permitted. On the other extreme, a progression was scaled for a three- to four-week period before a bland diet was used.

There were variations in practices concerning the bland diet itself. Some manuals required that all meats be ground and that all vegetables and fruits, except citrus juices and bananas, be cooked and puréed. Others permitted the use of tender whole meats; cooked diced vegetables, if tender; cooked fruits without skins or seeds; ripe raw peaches, pears, and apricots without skin; fine whole-wheat bread; and limited amounts of coffee. Thus, the terms "bland diet" and "modified Sippy diet" did not mean the same thing in different locations.

LOW-RESIDUE DIET

The so-called low-residue diet likewise presents a problem in nomenclature. It was described in ten of the twelve manuals as a dietary program apart from soft or bland diets. Seven of the ten manuals listed two such diets, one being moderate in residue content, the other with a minimum-residue content. The latter were described as "minimum residue," "residue poor," "non residue," "strict low residue," and "residue free." The terms "residue" and "fiber" were not differentiated. Again, there was excellent agreement as to purposes and objectives of these diets, but the diets themselves varied widely. Some permitted all refined cereals and breads, while others were restricted to farina and toast. Some permitted milk puddings, cream soups, and sauces, while others allowed no milk in any manner. In only one was milk used as a beverage. Some used fruit juices; others did not. Some allowed white potatoes while others recommended only cereal pastes such as macaroni. Some restricted fats and/or sweets and others did not.

One could continue to cite examples of faulty nomenclature because of lack of complete dietary description. The low-cholesterol diet today is subject to much confusion, because some believe that only animal fats should be restricted while others restrict both animal and vegetable fats.

INADEQUATE QUANTITATIVE TERMINOLOGY

Another problem in dietary nomenclature is the use of only qualitatively descriptive terms in situations where a definite quantity of a given nutrient is an important consideration. The terms "high" and "low" are often used to describe nutrient levels in relation to the Recommended Dietary Allowances or to the usual daily intake. Thus, a diet containing 100 to 120 gm. protein might be considered high in protein as compared with the Recommended Dietary Allowance for a given individual; on the other hand, in certain surgical situations, such as burns or in some liver disturbances, such levels of protein might be low in relation to actual body needs. In one manual, the high-protein diet provided 100 gm., while in others the high-protein diet included as much as 150 gm.

Likewise, terms such as "low-sodium," "minimal-sodium," and "very-low sodium" may designate the lowest level in a given hospital, but they provide no basis for comparison. Diets so described in the manuals provided 160 to 630 mg. sodium, depending on the precision used in specifying kinds and amounts of foods permitted. Thus, a physician who might be on the staff at several hospitals would have no way of knowing whether a given term meant the extremely low sodium level or a level of moderate restriction.

DIETS NAMED FOR A DISEASE

Diets are all too frequently named for a disease or a symptom. Thus, the diet manuals listed such terms as "ulcer diet," "progressive ulcer diet," "strict ulcer diet," "liberal ulcer diet," "initial ulcer diet," "final ulcer diet," "ambulatory ulcer diet," "ulcer discharge diet," "gastrointestinal section diet," "chronic ulcerative colitis diet," "celiac diet," "cardiac diet," "nephritic diet," "gallbladder diet"—even "vomiting diet." There are at least two objections to such names for diets. In the first place, it implies that there is complete conformity in terms of diseases (a fact which is not true). Then, too, the use of the name of a disease for a diet suggests that a given dietary program is restricted to that disease alone, which results in a multiplicity of diets. Furthermore, the psychologic connotations are most unfortunate. A patient should not need to be reminded of his illness every time he reads his tray ticket or diet list.

DIETS NAMED FOR PEOPLE

The use of authors' or doctors' names to identify diets is less frequently practiced than formerly. The Sippy, Karell, and Meulengracht diets have been used long enough to be familiar to almost everyone. Other names which were used in manuals appeared to be of a purely local nature. However, we must not lose sight of the fact that some of these local regimens might become more widely used. Why not choose the most appropriate name from the first? It was of interest to note that the authors of several diet manuals pointed out that the bland diet and the Meulengracht diet were similar, and that the former would be used whenever the latter was ordered.

CHARACTERISTICS OF GOOD DIETARY NOMENCLATURE

From the survey of current practices, it is possible to establish certain standards of good dietary nomenclature even though it is impossible to achieve all of them immediately.

First, when a term is used, it should have the

same meaning no matter where it may be used. The dietitian, physician, and nurse have a right to expect identity of principles and objectives; they have a right to expect that a given name will imply reasonable similarity if not altogether identical practices in applying these principles.

Second, effective dietary nomenclature should be in terms of the modification from the normal diet; that is, it should indicate modifications in nutrient levels, consistency, flavor, number of feedings, and so on. Nomenclature should avoid the unfortunate psychologic connotations of disease names or symptoms. Nomenclature should also avoid the use of personal names, since this masks the underlying principles of the diet and leads to multiplicity of diets.

Third, nomenclature should be sufficiently specific that there can be no confusion with regard to nutrient levels whenever the success of a diet depends on fairly close regulation in this respect. Thus, a specific designation, such as "200-mg. sodium diet" is to be preferred to the more relative term "very low sodium diet."

Fourth, the name of a diet should be as brief as is consistent with the above principles. It is not intended to take the place of a more complete description which may be given in the written dietary program, such as a diet manual.

WHAT A.D.A. HAS DONE TO CLARIFY TERMINOLOGY

The Diet Therapy Section of The American Dietetic Association has long been concerned with accurate and meaningful names for diets. A "Glossary of Dietetic Terms" was prepared by a committee consisting of Frances MacKinnon, Dorothy Duckles Hudson, and Jeanne d'Arc Hurley and published in 1946 as part of the *Handbook of Diet Therapy* (1). Publication of such work might imply a state of finality. However, no system of terminology is ever static. New techniques, new diets, new findings in research require new words to describe them. Likewise, when ideas and techniques are discarded, other words are rendered obsolete. Our knowledge of nutrition in both health and disease has broadened and grown so rapidly that a revised glossary has become imperative. An appreciation of this need led the Diet Therapy Section to initiate in 1947–48 a project on the revision of the glossary. This work has proceeded under the able chairmanship of Hazel Hauck.

Perhaps some idea of the way in which the committee functioned might result in a better appreciation of the scope of the present glossary.

The first problem the committee faced was the selection of terms. After some consideration, the following decisions were made to select:

(a) Terms relating to the field of dietetics or the work of the dietitian.

(b) Therapeutic diets.

(c) Nutrients, or classes of nutrients, required by man or thought to be useful in the human dietary.

(d) Terms used in describing diets or foods, or which are related to food composition, such as "food exchanges," "base forming," and so on.

(e) Diseases associated with dietary deficiency or conditioned malnutrition.

(f) Some terms relating to digestion.

Other terms appeared to be outside the scope of the glossary, and it should be borne in mind that the dietetic list of terms is not a substitute for a medical dictionary or a biochemistry textbook. Terms which fell into this category and which were not included were those for diseases of other than dietary origin, signs and symptoms of diseases, diets identified with proper names, food products except enriched and fortified foods approved by the Food and Nutrition Board, and metabolic processes and compounds involved primarily in metabolism. Some terms, such as "parenteral" and "hypervitaminosis," although related to nutrition have little relation to diet and were, therefore, omitted. Other terms, such as "available calcium" and "available iron," were omitted because the meanings for them at present are by no means clear.

The next step was the formulation of a definition for each term. This step required careful weighing of word usage. Many of the definitions which had been used in the first edition were retained or modified slightly. When all changes and corrections had been approved by at least two of the three committee members, the tentative glossary was submitted to six referees for additions or deletions with regard to choice of terms and for critical examination of definitions for accuracy and clarity. The list was again revised and then submitted to the chairmen of the Diet Therapy Sections of the state dietetic associations. Most of their suggestions resulted in further improvements in wording.

The completed glossary represents an outstanding piece of work, and undoubtedly it will enjoy wide usage. It has been used again as the basis for the dietary plans described in the new revised edition of the *Handbook of Diet Therapy*. The Diet Therapy Section is especially grateful to Dr. Hauck, Beatrice Finkelstein, and Helen Pilcher for assuming the responsibility in planning and completing this project.

RESPONSIBILITY OF THE INDIVIDUAL DIETITIAN

The revision of the dietetic glossary will have been justified only if it is used. Each dietitian has a responsibility in using correct terminology in her own work; that is, in the preparation of diet manuals, the writing of diets in the hospital or the out-patient department, in the teaching of students and patients, in her conversation with co-workers in her department, with nurses, physicians, and the layman. Over-

Even tired, lagging appetites quickly respond to the refreshing flavor of these tempting milk drinks made with Pet Milk! Smooth and delicious, they provide the flavor-variety and appetizing goodness so important when "nothing seems to taste good."

Even more important, they provide *extra* calcium, high quality protein and other milk nutrients. Pet Evaporated Milk is concentrated to twice the food value of bottled milk. Especially when diluted with fruit juices, vegetable liquid, or carbonated beverages, Pet Milk makes an unusually nourishing milk drink.

Your patients will enjoy these refreshing milk beverages—and you'll find them easy to prepare, low in cost, with Pet Milk and these special recipes. For your free copy of this handy booklet, send the coupon below.

PET MILK COMPANY
1450-G Arcade Building, St. Louis 1, Mo.

Please send me, free, a copy of "Milk Beverages Serving 10."

*Name*_____

*Address*_____

*City*_____ *Zone*_____ *State*_____

(Fill in completely. Offer limited to residents of continental U. S.)

night she cannot revise the terminology which others use, but her emphasis on correct word usage in teaching students is an effective medium. Her quiet persistence in using good dietary nomenclature is much more effective than a crusading campaign designed to convert others.

Dietary nomenclature will continue to improve only if we work at it. We cannot divorce the name of the diet from dietary description. This, in turn, requires exact information on food values, the behavior of foods in the body in various situations, and thus on the principles of diet therapy. The therapeutic dietitian who initiates or assists in any of these phases of dietary research will help to clarify our understanding of diets and will thus exert a dominant influence on the course of dietetic nomenclature.

It is encouraging to note that many state diet therapy chairmen in answer to a questionnaire sent out last summer expressed a need for further study of several diets, the restricted-sodium and bland diets being mentioned most frequently.

Surely we can depend on dietitians to stimulate and to participate in dietary studies designed to clarify dietary description and thus dietary nomenclature. In their daily use of dietetic terms they should not be like Humpty Dumpty who said to Alice in a scornful tone, "When I use a word it means just what *I* choose it to mean—neither more nor less."

REFERENCE

(1) TURNER, D.: Handbook of Diet Therapy. Chicago: The University of Chicago Press, 1946.

BIOGRAPHICAL NOTES FROM THE HISTORY OF NUTRITION

Friedrich Wöhler—July 31, 1800–September 23, 1882

When Wöhler synthesized urea from ammonium cyanate (1828), the concept of organic chemistry changed. Up to that time organic chemistry had been considered to deal only with living material; organic compounds, it had been thought, could only be synthesized by some plant or animal.

Wöhler also laid the foundation for the modern study of the chemistry of metabolism. In 1824 he showed that benzoic acid ingested with food appears in the urine as hippuric acid; further work in 1842 confirmed this discovery. The current theory was that plants could make what they needed but that animals must have their complex organic constituents already preformed for their use. Wöhler's work demonstrated the fallacy of this theory and opened the way for the study of the chemistry of metabolic changes in the body.

Wöhler's later work was entirely in the field of inorganic chemistry.

Friedrich Wöhler was born in the village of Escherheim near Frankfurt, Germany. From his father he learned to sketch and enjoy the beauties of nature. He went to the University of Marburg to study medicine because his father had been a student there. However, his real interest was in experimenting, and his living room became a laboratory where he studied the cyanogen compounds. At Heidelberg, Gmelin advised him to devote himself to chemistry and also suggested that he go to Sweden to study with the great chemist, Berzelius. Wöhler developed a lifelong friendship with Berzelius and later translated his works on chemistry. After a year in Sweden, Wöhler was appointed teacher of chemistry in the newly founded Trade School in Berlin (1825). Here he stayed six years, during which time he isolated aluminum and published twenty-two papers. In 1831 he went to Cassel, and in 1835 he became Professor of Chemistry at the University of Göttingen, where he remained the rest of his life and brought fame to Göttingen.

Wöhler was recognized by almost every learned society and academy of his day. He published some 275 papers and by his work directed science into new paths. Wöhler was a great friend of Liebig and published a number of papers jointly with him. He was an unusually keen observer and was calm and deliberate in his approach to every problem; he avoided the bitter arguments and attacks on other scientists and their ideas which was a common practice among some of the leading chemists of the day.

His life was one of happiness in his work, his home life, and his friendships. He died September 23, 1882.

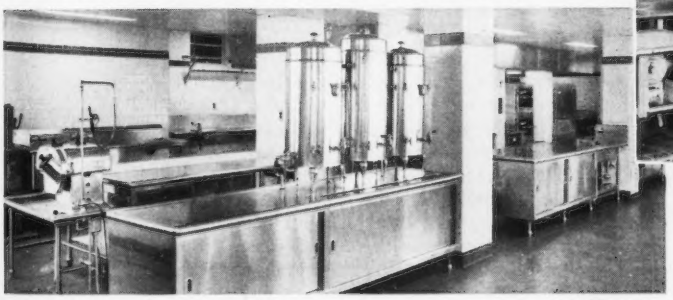
REFERENCE: Thorpe, T. E.: Friedrich Wöhler. *In* Essays in Historical Chemistry. New York: Macmillan Co., 1902, chap. 10. Warren, W. H.: Contemporary reception of Wöhler's discovery of the synthesis of urea. J. Chem. Ed. 5: 1539, 1928.

Contributed by E. Neige Todhunter, Ph.D., Head, Department of Foods and Nutrition, University of Alabama, Tuscaloosa.

award winners prefer *TRI-SAVER* coffee urns

MUTUAL LIFE INSURANCE COMPANY, NEW YORK
First Award — Close-up of cafeteria counters showing coffee urn stations, employees' cafeteria. Note Tri-Saver combination urns.

WILSON MEMORIAL HOSPITAL, Johnson City, New York
Merit Award — Note the Tri-Saver three-piece battery on stainless steel stand — main kitchen. Coffee urns are also of stainless steel.

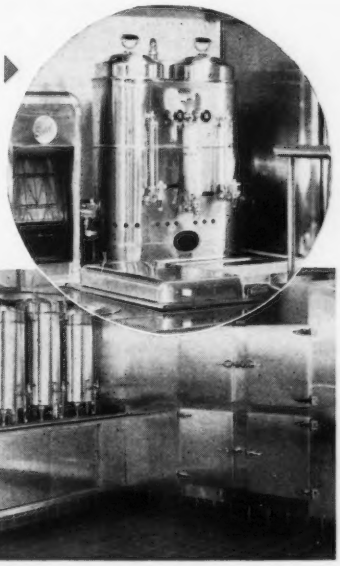


Institutions Contest winners eliminate urn bags and filter paper with Blickman TRI-SAVER system.

• Where coffee brewing demands are heavy — where reliable service is a necessity — experienced operators insist on Tri-Saver coffee urns. Here are shown some of the Tri-Saver installations among recent Institutions Magazine Food Service Contest winners. Proven performance in providing a *uniformly rich, flavorful brew* and *elimination of urn bags or filter paper* — were important factors in the selection of this equipment. Let the experience of these prominent institutions guide you. Specify Tri-Saver for your new coffee making equipment.

BAYLOR HOSPITAL, Dallas, Tex.
Merit Award — Note space-saving Tri-Saver stainless steel twin urn in floor pantry.

STATLER HALL, CORNELL UNIVERSITY, Ithaca, New York.
Honor Award — Stainless steel 3-piece Tri-Saver battery and urn stand — main kitchen.



This permanent stainless steel Tri-Saver filter eliminates urn bags and filter paper. A quick rinse cleans filter. Coffee grounds cannot clog it.

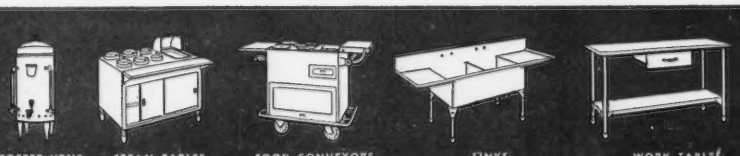
OTHER 1951 AWARD WINNERS USING TRI-SAVER URNS

Northern Indiana Children's Hospital, South Bend	Honor Award
Weldon Cafeteria, Houston, Texas	Merit Award
Burdine's, Inc., Miami, Florida	Merit Award
M. K. Goetz Brewing Co., St. Joseph, Mo.	Honor Award
Agnes Scott College, Decatur, Georgia	Merit Award

Send for Tri-Saver book — gives full story of Tri-Saver Coffee System. Shows complete line of single urns, batteries, twin, combination and institution urns in capacities from 3 to 80 gallons. Available for gas, steam or electric heat.

S. BLICKMAN, INC., 4007 **Gregory Ave., Weehawken, N. J.**
New England Branch: 845 Park Square Bldg., Boston 16, Mass.

Blickman-Built
FOOD SERVICE EQUIPMENT
EST. 1889



We welcome you to our exhibit at The American Hospital Association Convention, Convention Hall Booth 329, Philadelphia, September 15–18.

New Bread Standards

On August 13, standards for five leading varieties of bread, as determined by the Food and Drug Administration, will become effective. The standards are for: white bread, enriched bread, milk bread, raisin bread, and whole wheat bread.

Information concerning these standards has been supplied by the Food and Drug Administration in the form of questions and answers, as follows:

What do the standards do? ANS.: They (a) specify the names under which these five varieties of bread must be sold; (b) list the ingredients which are required to be used; (c) list optional ingredients which are permitted; (d) exclude any ingredients not specifically authorized; (e) designate which optional ingredients must be named on the label.

What ingredients are required? ANS.: The basic ingredients traditionally found in cookbook recipes for home-made bread: flour, water or milk, yeast, and salt.

What kind of ingredients are optional ingredients? ANS.: Shortening; milk (except in milk bread where it is the sole moistening ingredient); eggs; sweetening ingredients; malt products; yeast foods (also known as "dough conditioners" and "bread improvers"); certain calcium and ammonium salts; minute amounts of potassium bromate, potassium iodate, or calcium peroxide; spices; mold and spoilage inhibitors; small amounts of ground dehulled soy beans; and flours other than wheat flour.

Why is there a limit of 3 per cent on soy flour? ANS.: Because larger amounts would change the composition, appearance, and flavor of the bread so that it would no longer be what the consumer expects. The baker can, however, use sufficient soy flour to make a distinctive kind of bread not covered by the standards if he labels it with a name that is not misleading and lists the ingredients on the label.

What is the status of so-called chemical ingredients under the standard? ANS.: They are permitted only when they (a) serve a useful purpose and (b) are safe.

What is the status of the so-called "bread softeners"? ANS.: The polyoxyethylene types of softeners or emulsifiers were ruled out because evidence of their safety was not considered adequate, and because the softening effect on bread might deceive consumers as to its age. Mono- and diglycerides in shortening when used in excessive amounts also produce a deceptive softness. Small amounts do not, and they serve useful purposes. There is no evidence that they are harmful, but they are permitted in small amounts on a tentative basis pending further hearings on the physiologic effect of these and other surface-active agents.

How do the standards protect the consumer's pocketbook? ANS.: (a) The standards limit moisture content of bread to 38 per cent and require minimum solids content of 62 per cent. By specifying the basic ingredients they fix the real value of a loaf of bread. (b) Standards prevent the adding of insignificant amounts of "fad" ingredients as a basis for exaggerated claims. (c) Standards promote truthful labeling: "whole wheat" bread must be made of 100 per cent whole wheat flour; "milk" bread must be made with whole milk as the sole moistening ingredient, or an equivalent amount of other milk products; "raisin" bread must contain not less than 50 parts by weight of raisins to each 100 parts of flour.

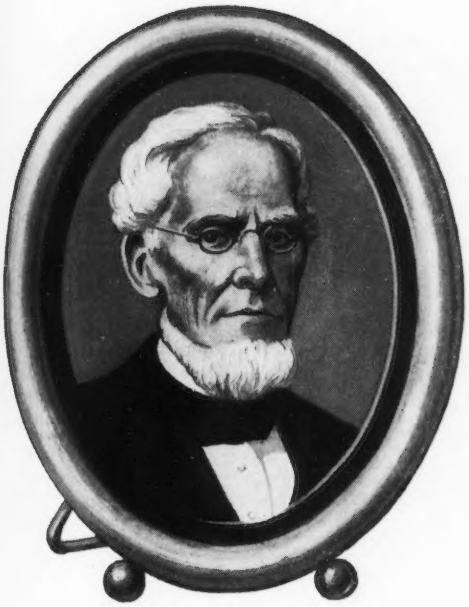
Will all brands of breads for which standards have been issued be exactly alike? ANS.: No. The standards specify the basic ingredients, but the baker will be free to make whatever type of loaf he wishes—a compact, crusty loaf, or a light, fluffy loaf, depending on his selection of optional ingredients and the way he handles the dough.

What changes can be expected in bread labels? ANS.: Under the law, the basic ingredients do not have to be listed because the standards guarantee that the bread contains these ingredients. The law requires certain optional ingredients to be listed. The major change in labels may involve "whole wheat" breads. After the standards become effective, "whole wheat" breads which are not made of 100 per cent whole wheat flour, including the wheat germ, may not be labeled "whole wheat." All non-standard breads, such as rye bread, pumpernickel, egg bread, cracked wheat bread, and so on, are required to carry a complete list of ingredients on the label in the order of their predominance by weight, but the law does not require the quantity of any ingredients to be stated.

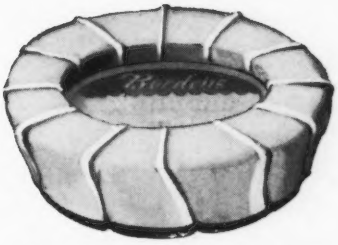
Will there be any noticeable changes in bread as a result of the standards? ANS.: Most brands of bread are now being made in conformity with the standards and presumably will not be changed to any noticeable extent.

These standards have been issued after hearings which were begun originally eleven years ago. However, action was postponed in 1943 when it appeared that the standards might interfere with war measures to cope with food shortages. Hearings were resumed in November 1948 and continued for nine months. Several months were required to study and condense the 17,000 pages of evidence. A proposed order setting standards of identity for six kinds of bread made from wheat flour was issued on August 8, 1950. Unsalted bread was included in the proposed standards, but omitted from the final standards just issued because of lack of sufficient evidence to establish its composition.

We can take milk's goodness for granted



...because he didn't



You might have passed him by... this old man whose eyes shone with a young man's purpose. He was fifty-six, and his hair and beard were white. His clothes were threadbare. He was penniless and being sued for debt besides. He had tried many things and had known failure. But he had three assets left: Integrity, the will to win, and a good name. This was Gail Borden...

Many adults and thousands of infants were dying yearly in New York from infected milk...when Gail Borden finally achieved his dream...the manufacture of condensed milk that stayed pure, fresh and wholesome. He made milk *safe* for you. * He established the first code of sanitation in dairy practice, and fought ceaselessly for cleanliness. He paid his dairymen to destroy infected milk. * The quality in the bottle of milk we take for granted today is only part of the Borden story. The Borden Company in 1857 began the manufacture and distribution of Gail Borden's newly invented condensed milk, the first milk food for infant feeding. * Borden's "firsts" have been many. First to manufacture a dried milk specialty for infant feeding—Dryco. * First to provide a specially prepared food for infants, children, and adults allergic to milk—Mull-Soy. * First to provide a complete infant food carrying the fatty acid pattern and amino acid pattern of human milk—Bremil. * The lists of Borden contributions to the development of milk in all its forms as a safe, dependable source of nutrition are too many to list here in their entirety. * But if it's Borden's—it's got to be good.

Manufacturers and distributors of BORDEN'S Beta Lactose • BIOLAC infant food • DRYCO infant food • KLIM powdered whole milk • BREMIL powdered infant food • MERRELL-SOULE Powdered Skimmed Milk • MULL-SOY hypoallergenic food BORDEN'S Evaporated Milk • STARLAC non-fat dry milk Instant Coffee • Fresh Milk • Ice Cream and Cheese.

The *Borden* Company
350 Madison Avenue, New York 17, N. Y.

Current Literature

Contributed by Mildred Bonnell and administrative dietetic interns, University of Washington, Seattle; Minnie Brandt, Chicago; Janette C. Carlsen and Ethel M. Miller, The Johns Hopkins Hospital, Baltimore; Pauline Kegereis, The Children's Mercy Hospital, Kansas City, Missouri; and the Journal staff

THE AMERICAN JOURNAL OF DIGESTIVE DISEASES

Vol. 19, April, 1952

* Reduction of hypercholesterolemia by high-fat diet plus soy bean phospholipids. F. M. Pottinger and B. Krohn.—p. 107.

Reducing Hypercholesterolemia by Diet. One hundred twenty-two hypercholesterolemic patients followed a high-fat diet containing over 4000 calories. About 30 to 40 per cent of this was fat of predominantly animal origin. The patients were advised to eat internal organs including at least a tablespoon of raw liver and one of raw brains daily. The daily diet also included a teaspoon of a B-vitamin concentrate extracted from rice bran. Ninety-one patients took 1 tsp. soy bean phospholipids with each meal. These phospholipids include a mixture of 29 per cent lecithin which includes choline, 40 per cent inositol phospholipids, and 31 per cent cephalin. The blood cholesterol was lowered in 79 per cent of the patients who took phospholipids. In the controls there was no tendency for the cholesterol either to rise or fall. This indicates that it may be possible to correct hypercholesterolemia while the patient eats a high-fat, high-cholesterol diet. Evidence is reviewed which suggests that the fat may aid in correcting this lipid dyscrasia. This therapy tends to reduce hypercholesterolemia by promoting healthy lipid metabolism.

ARCHIVES OF PEDIATRICS

Vol. 69, February, 1952

* School lunch program in the schools of San Francisco. J. C. Geiger and K. Thody.—p. 61.

School Lunch. In an estimate of the contribution the school lunch makes to the nutrition of school children, a number of tendencies were observed in San Francisco where twenty-four elementary and nineteen secondary schools operate cafeterias under the national School Lunch Program. It was noted that children selecting the plate lunches receive from 10 to 30 per cent more of the essential foods than those taking lunches from other sources. Attention was called to the fact that the planned plate lunch gives more nutritive value for its cost than do the luxury foods.

CANADIAN JOURNAL OF PUBLIC HEALTH

Vol. 43, March, 1952

* Dental care of the pre-school child. G. C. Clarke.—p. 116.

Dental Care of the Pre-School Child. Leading nutritionists and dentists agree that the control of concentrated carbohydrates is essential in reducing dental caries. In a campaign to reduce sugar intake, an attempt was made to influence children and parents by suggesting alternative foods which are nutritious and attractive. In place of jam for sandwiches, peanut butter, meat, or cheese was suggested; instead of cookies and pastry, fresh fruits; peanuts, popcorn, or potato chips rather than candies; and whole milk (not chocolate) in place of soft drinks. Raw vegetables are also included. It seems wise to demonstrate visually to parents of the pre-school child what may be expected from the unrestricted use of hard, stick candy and gum, which should be completely eliminated from the child's dietary. As the child grows older, an occasional treat of chocolate or soft candy after a meal can do no harm if the teeth are brushed and rinsed immediately afterward. A plan for the dental care of the pre-school child would include an organized educational program conducted by nurses and dentists within the framework of a public health department and the instituting of a preventive dental care program at the age of two and a half or three years.

CEREAL CHEMISTRY

Volume 29, March, 1952

* Effect of potato flour on bread quality and changes with age. R. H. Harris, L. D. Sibbitt, and O. J. Banasik.—p. 123.
* The effect of maturity on the variation in protein, niacin, and pantothenic acid content of corn hybrids. C. H. Hunt, L. D. Rodriguez, S. Taylor, and R. M. Bethke.—p. 142.

Potato Flour and Bread Quality. Potato ingredients have been believed to improve the quality of bread; therefore, studies were made to obtain more information on the effect of cooked potato flour on the baking quality, crumb firmness, and crumb hydration of bread. In general, it raised the flour absorption and reduced the rate of change due to age. Careful analysis of variance was necessary in appraising crumb firmness and hydration data since the adjuncts of potato flour and stearate, methods of baking, and age all had significant influence on the findings. Potato flour apparently increased crumb hydration slightly but did not materially increase moisture retention. Further study indicated that moisture loss was not a factor influencing firmness, but the size of the loaf was negatively correlated with firmness.

Effect of Maturity on Corn Hybrids. The effect of maturity on the variation in the protein, niacin, and pantothenic acid content of corn hybrids was studied. Grain from six open pollinated field-grown corn hybrids was collected at nine stages of maturity during the growing seasons of 1947 and 1948. It appears that as the plant matures, the niacin and pantothenic acid contents decrease faster than the protein content with the resulting downward trends in the respective ratios of these vitamins to the protein content. However, pantothenic acid decreases faster than niacin, thus causing an upward trend in the ratio of niacin to pantothenic acid.

FOOD RESEARCH

Vol. 17, March–April, 1952

* Ascorbic acid and dehydroascorbic acid in some raw and cooked Puerto Rican starchy foods. C. F. Asenjo, R. M. Torres, D. Fernández, and G. V. de Urrutia.—p. 132.
* Effects of internal temperature and of oven temperature on the cooking losses and the palatability of baked salmon steaks. H. Charley.—p. 136.
* The B vitamins in raw and cooked lamb. II. Riboflavin and niacin. E. B. Wilcox and L. S. Galloway.—p. 144.
* Retention of thiamine and pantothenic acid in pork after stewing. S. Cover and W. H. Smith, Jr.—p. 148.
* Nutritive value of milk proteins. I. Stability during sterilization and storage of evaporated milk as determined by the rat repletion method. A. Z. Hodson.—p. 168.

Puerto Rican Starchy Foods. For testing the ascorbic acid and dehydroascorbic acid content before and after cooking, eighteen tropical vegetables were purchased in Puerto Rican markets. Preparation consisted of cutting each vegetable into two equal parts, the first to be tested in the raw state and the second after boiling only until done in water to cover, using a covered container. The yellow sweet potato, both raw and cooked, had the highest values. Loss varied in the different vegetables from 82.1 to 25.6 per cent, the mean loss being 56 per cent. No ascorbic acid or dehydroascorbic acid was found in the cooking waters. The vegetables of the group containing and retaining the greatest amounts are eaten in abundance and are assumed to contribute substantially to the fulfillment of the ascorbic acid and dehydroascorbic acid needs in Puerto Rico.

Effect of Cooking on Salmon Steaks. Salmon steaks were baked at four oven temperatures to a constant internal temperature, and at a constant oven temperature to four different internal temperatures to determine cooking losses, press

The Jewels of the Dietitian

Ideal

● In the hospital world the trade mark "Ideal" commands respect, confidence and admiration for advanced design, fine precision workmanship, limitless durability and consistent satisfaction in use.

The contribution that Ideal makes to nutritional therapy, and to economy of food, labor and time are reasons why Ideal equipment is found in foremost hospitals.

Because of its universal preferment by outstanding hospitals, the Ideal Food Conveyor has become an accepted symbol of fine hospital administration in all departments.

- The first hospital Food Conveyor was an Ideal.
- The first electric hospital Food Conveyor was an Ideal.
- Ideal builds the only special Diet Tray.
- Ideal Food Conveyors embody many exclusive features which contribute directly to better feeding and reduced cost.
- Ideal leadership is based on vast experience in the specialized field of thermostatically controlled hospital equipment.
- Write for complete data about Ideal Food Conveyors, Ideal Tray Conveyors, Ideal Hot Pack Heaters and the sensational new Ideal Terminal Sterilizer.

Ideal®
HOSPITAL EQUIPMENT
Found in Foremost Hospitals

HOSPITAL INDUSTRIES ASSOCIATION HIA

Made only by the

SWARTZBAUGH MANUFACTURING COMPANY

Established in 1884—Toledo 6, Ohio

Distributed by the Colson Corporation, Elyria, Ohio; The Colson Equipment and Supply Company, Los Angeles, and San Francisco. In Canada: Canadian Fairbanks-Morse Company.

fluid, and palatability. There were no differences in loss of weight due to evaporation associated with the four oven temperatures, but there was higher drip loss at 500°F. than at the other temperatures. Baking steaks to an internal temperature of 176°F. resulted in significantly greater evaporation and total cooking losses than did baking them to an internal temperature of 158°F. The different oven temperatures caused no difference in the percentage of press fluid, but the different internal temperatures resulted in significant differences, the steaks cooked at the higher temperatures yielding less press fluid than those cooked at lower temperatures. Judges' opinions differed in analyses of moisture, flavor, and over-all desirability.

B Vitamins in Lamb. Raw and cooked cuts of lamb were used to study riboflavin and niacin content and retention. The average riboflavin content of the different raw cuts ranged from 0.202 to 0.265 mg. per 100 gm. In cooking, riboflavin retention for chops ranged from 73.8 to 81.4 per cent; that for roasted legs from 72.0 to 88.1 per cent. Cuts stewed in a small amount of water contained more riboflavin than those cooked in a large amount of water, but the broths of the latter were superior in riboflavin content. Niacin values for chops on both the moist basis and the dry, fat-free basis were slightly higher than those for legs and shoulders, the latter two being similar. Average niacin for chops was 6.9 mg. per 100 gm.; for legs, 5.7 mg.

Thiamine Retention in Pork. Lean meat from 200-lb. hogs was prepared under standardized conditions and tested raw, pressure-cooked, boiled, and simmered for retention of thiamine and pantothenic acid. Each process included testing the meat, both browned and unbrowned. The average thiamine retention for all browned stews was 53 per cent and for all unbrowned, 74 per cent. The nutritional significance, however, is interpreted according to the recommended allowances. For browned pork stews, 12 per cent of the thiamine would be furnished in a serving; for light stews, 16 per cent. Average pantothenic acid retentions were: 79 per cent for browned stews, 93 per cent for light stews—a highly significant difference. For neither nutrient, however, was there a significant difference between cooking temperatures.

Milk Proteins. In comparing proteins of non-sterilized and sterilized evaporated milk by the rat repletion method, no significant loss of protein value was found to result from sterilization. Storing the milk showed that little change occurred in the nutritive value of the proteins in sixteen months, although essential amino acids were shown to be lost in prolonged storage.

INDUSTRIAL AND ENGINEERING CHEMISTRY

Vol. 44, January, 1952

* Maturing and bleaching agents used in producing flour. C. G. Harrel.—p. 95.

Maturing and Bleaching Flour. The term "bleaching" in connection with the preparation of flour has also been used to include artificial aging, or maturing. Actually, the terms should be differentiated. Bleaching refers to the control of color. Maturing means the application of an oxidation process which changes the properties of the flour to produce a livelier, drier, more machinable, better baking dough. Chlorine dioxide produces these effects faster and more uniformly than does natural, long-time storage and aging; at the same time it serves as a bleaching agent. It is widely used at present and shows no toxic effects on animals. The history of various bleaching agents is discussed and tests are graphically illustrated. For the protection of the consumer, both from economic and nutritional standpoints, continued research is being conducted on the treatment of flour.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 148, April 19, 1952

* Detection and treatment of nutritive failure in children. Recent observations. T. D. Spies, S. Dreizen, G. S. Parker, and D. J. Silberman.—p. 1376.

* Folic acid deficiency in macrocytic anemia of pregnancy and infancy. Editorials and Comments.—p. 1422.

Vol. 149, May 3, 1952

* Diabetes mellitus and coronary disease. Queries and Minor Notes.—p. 98.

Nutritive Failure. Several cases are presented to show the interrelationship of nutritional, hormonal, and hereditary factors, and their effect on health and growth of the child.

Macrocytic Anemia of Pregnancy and Infancy. The part folic acid plays in some types of macrocytic anemia is reviewed.

Diabetes and Coronary Disease. Though adequate control and good nutrition is always necessary in diabetes, there is the admonition that hypoglycemia should be avoided, particularly in a diabetic patient with coronary heart disease.

THE JOURNAL OF BIOLOGICAL CHEMISTRY

Vol. 195, April, 1952

* Extraction of zinc-containing protein from human leucocytes. F. L. Hoch and B. L. Vallee.—p. 531.

* Carbonate as precursor of milk constituents in the intact dairy cow. M. Kleiber, A. H. Smith, and A. L. Black.—p. 707.

Zinc-Containing Protein of Leucocytes. Human leucocytes contain zinc in a constant proportion to the total content of protein. The zinc is firmly bound to the protein. These studies indicated two types of complexes of zinc protein in human leucocytes, one soluble and the other insoluble under some conditions. The zinc content of white cells from patients with leukemia is reduced about 90 per cent, but returns to normal as leukemia improves.

Carbonate in Milk Formation. The incorporation of carbon from carbonate into organic compounds, known as carbon dioxide fixation, was formerly regarded as an exclusive function of green plants and autotrophic microorganisms. However, it has been demonstrated in heterotrophic systems since the advent of metabolic tracers. This paper deals with the role of carbonate as a precursor of lactose, casein, and butterfat in cow's milk. In this experiment a dairy cow was injected intravenously with 6.6 mc. of C^{14} contained in a solution of sodium bicarbonate. The radioactivity was measured in expired carbon dioxide as well as casein, albumin, lactose, and fat of the milk over a period of 33 hr. after injection. The ratio of specific activity in the product to specific activity in carbon dioxide increased with the time from injection. This change indicates that several metabolic paths with different delays are involved in carbonate fixation to a given milk component. About 10 per cent of the carbon in lactose, 4 per cent of the carbon in casein, and 2 per cent of the carbon in fat originated from carbonate.

JOURNAL OF HOME ECONOMICS

Vol. 44, May, 1952

* The psychological aspects of eating. S. W. Ginsburg.—p. 325.

* FAO needs home economics. H. K. Stiebeling.—p. 329.

Trends in home economics enrollment. B. I. Coon.—p. 334.

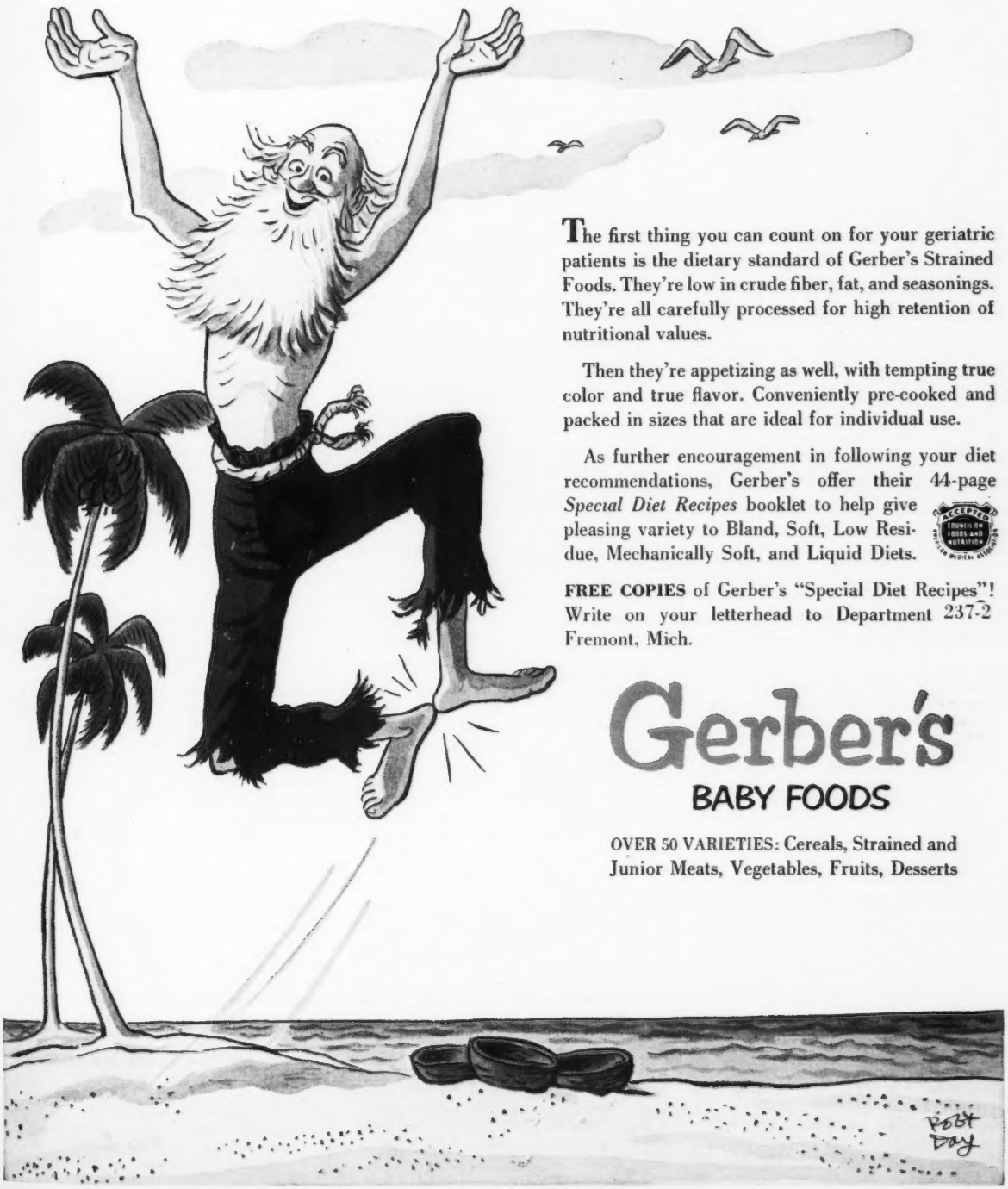
* Nutritional status of pre-adolescent children in a French community of Louisiana. D. S. Moschette, L. C. McBryde, C. Pudelkewicz, and C. Tucker.—p. 344.

* Sweetening agents for frozen strawberries. E. H. Dawson, B. L. Harris, and S. Alexander.—p. 351.

Psychologic Aspects of Eating. Emotionally endowed ideas about food and eating are discussed. Eating, even in infancy, is more than an act performed for the purpose of staying alive; it connotes security or isolation. Examples of people with abnormal eating patterns due to emotional conflicts are given: the anxious eater, the ritualistic eater, the substitutive eater, the picky "spoiled darling," and the indifferent eater. Emotional motivation of dieting is analyzed.

FAO Needs Home Economics. The home economics interests of the Food and Agriculture Organization were transferred from the Welfare Division to the Nutrition Division in 1951 when the former was discontinued. The worldwide educational program concerned with food selection, preparation, and utilization to advance the nutritional standard of living was thereby strengthened. The Technical Aid Program gives governments an opportunity to ask for home economics assistance, and the author cites Syria and Greece as examples of "success stories." Personnel, however, are needed who are competent in subject matter and properly oriented in the sociologic implications of their missions. Natives of the countries involved are especially important for such work. Many home economists who have not thought of themselves as helping in the FAO program, the author notes, are actually doing so; by actual teaching

There was an old man of Tobago,
Who lived on rice, gruel, and sago;
Till, much to his bliss,
His physician said this—
"To a diet of Gerber's you may go."



The first thing you can count on for your geriatric patients is the dietary standard of Gerber's Strained Foods. They're low in crude fiber, fat, and seasonings. They're all carefully processed for high retention of nutritional values.

Then they're appetizing as well, with tempting true color and true flavor. Conveniently pre-cooked and packed in sizes that are ideal for individual use.

As further encouragement in following your diet recommendations, Gerber's offer their 44-page *Special Diet Recipes* booklet to help give pleasing variety to Bland, Soft, Low Residue, Mechanically Soft, and Liquid Diets.

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

FREE COPIES of Gerber's "Special Diet Recipes"! Write on your letterhead to Department 237-2 Fremont, Mich.

Gerber's
BABY FOODS

OVER 50 VARIETIES: Cereals, Strained and Junior Meats, Vegetables, Fruits, Desserts

and by displaying good knowledge and use of home economics, they are influencing foreign students in the U. S. to improve their own methods.

Children in Louisiana. Forty-five elementary school children in a French community of Louisiana were assessed for nutritional status. Tests included: height and weight measurements; clinical examinations for signs and symptoms associated with dietary deficiencies; and biochemical measurements for hemoglobin, erythrocyte count, and plasma level of carotene and vitamin A. Blood samples were taken, and seven-day dietary records were obtained. Thirty-one per cent had diets rated as good; 18 per cent, fair; and 52 per cent, poor. Most of the children were short and underweight for their age, and there was a relatively high incidence of minor changes often associated with nutritional deficiency. Dietary findings with regard to nutrient intake vs. Recommended Dietary Allowances are tabulated and summarized.

Sweetening Frozen Strawberries. Yardsticks for a sweetening agent to use in freezing strawberries are: (a) effect on flavor, texture, and color of the fruit and (b) degree of preservation of these characteristics in frozen storage when different concentrations of the sweetener are employed. Results of an experiment involving (a) various proportions of sucrose sirup and corn sirup (either enzyme-converted or acid-converted), (b) simple sucrose sirup, (c) simple corn sirup either enzyme- or acid-converted, (d) solid sucrose, and (e) unsweetened natural juice are reported. Flavor was best when strawberries were packed with 1 part sucrose to 4 parts fruit by weight; texture rated highest when sirup was made with 1 part acid- or enzyme-converted corn sirup and 3 parts 40 per cent sucrose sirup. Differences in color were slight.

THE JOURNAL OF NUTRITION

Vol. 46, April, 1952

* An attempt to produce hemochromatosis experimentally and the effect of high levels of copper and choline in the diet. N. Kaufman, J. A. Cartaya, P. L. White, D. M. Hegsted, and T. D. Kinney.—p. 433.
* Relationships between intake and serum levels of ascorbic acid, vitamin A, and carotene of selected groups of children with physical signs of vitamin deficiencies. S. B. Merrow, R. F. Krause, J. H. Browe, C. A. Newhall, and H. B. Pierce.—p. 445.
* Tocopherol content of human milk and of cows' milk products used for infant feeding. P. L. Harris, M. L. Quaife, and P. O'Grady.—p. 459.
* The effect of dietary fat on the reproductive performance and the mixed fatty acid composition of fat-deficient rats. F. A. Kummerow, H. P. Pan, and H. Hickman.—p. 489.
* Factors affecting the percentage of certain proteins in egg white. F. A. Csonka and M. A. Jones.—p. 531.

Copper-Choline Relationship. In an investigation of the relationship between copper and choline, a low-protein, low-choline diet was fed to rats. Supplements of ferric citrate powder, copper salts, choline chloride, and casein were used. Neither iron nor copper was detrimental when fed alone, although the combination was definitely toxic. The same combination of iron and copper was not toxic when casein and choline were also used, but the addition of choline without casein did not exert a protective effect. Choline apparently increased the absorption or deposition, or both, of copper in the liver, or inhibited its excretion. The effect was quantitative in that high levels of choline caused greater weight losses than low levels. Casein feeding minimized the effect of copper, although the quantitative aspects of this action with regard to copper and choline were not investigated. Since liver copper was low after feeding casein, it seems probable that casein affects either the absorption or excretion of copper.

Nutrient Intake and Serum Levels. A three-year study has been made of serum levels and nutrient intake of 160 school children in Burlington, Vermont. Pupils were divided into two groups: (a) those with low and high *serum levels* of ascorbic acid, vitamin A, and carotene and (b) those with low and high *intakes* of these nutrients. It was found that nutrient intakes of ascorbic acid, total vitamin A, and carotene reflect serum levels, and vice versa. However, relationships were not found between serum levels of vitamin A and nutrient intake of vitamin A *per se*.

Tocopherol Content of Milks. The tocopherol content of a series of human milk samples representing various donors and stages of lactation was found to be 0.10 to 0.48 mg. per 100 ml. milk, with a mean of 0.24 mg. per 100 ml., or about 80 mcg. per gram fat. This was two to four times as great as in cow's milk. Tocopherol values did not vary with stage of lactation but were correlated with the fat content of the milk. No loss of tocopherol occurred on pasteurizing human milk. Evaporated cow's milk and samples of whole milk powder contained 23 to 40 mcg. tocopherol per gram fat. Proprietary infant foods contained 29 to 171 mcg. alpha-tocopherol per gram fat

Fat and Reproduction. Female rats were allowed to grow to maturity on a fat-free diet and then were bred. All produced young which were born dead or died soon after birth. When this diet was supplemented with 5 per cent hydrogenated fat, the animals gave birth to living young which did not live more than 72 hr., while those fed 5 per cent corn oil weaned 85 per cent of their young. Total fat analyses of representative female rats and their newly born young indicated that the animals which had been kept on the fat-free diet were deficient in arachidonic acid and not deficient in fat *per se*. The largest differences occurred in the phospholipid fraction of the fat extracted from the young. The phospholipids of the young from animals which had received corn oil contained from five to ten times as much arachidonic acid as those from rats on the fat-free diet. The young from animals on hydrogenated fat contained two times as much arachidonic acid.

Egg White Proteins. The percentages of the proteins in chicken egg white, as determined electrophoretically, are influenced by the nature and quality of the protein in the diet of the laying hen, as well as by genetic differences.

THE LANCET

Vol. 1, April 5, 1952

* Self-demand feeding in a maternity unit. R. S. Illingworth and D. G. H. Stone.—p. 683.

Self-Demand Feeding. In a maternity unit, 106 babies were fed on a rigid schedule of six feedings in the 24 hr., and 131 babies were fed on demand. In the latter group, demands were most frequent between the fourth and seventh days. On the fifth day, 36 babies (28.6 per cent) demanded eight feedings or more, and 12 babies (9.5 per cent) demanded nine feedings or more. The "demand" group gained weight faster than those on a rigid schedule. There was a strong positive correlation between the weight gain and the amount of milk taken from the mothers' breasts, as shown by test feedings. At discharge, 88 per cent of the babies on the rigid schedule and 94.4 per cent of the demand group were being fully breast-fed. At the age of one month, 64.5 per cent of the rigid schedule group and 80.3 per cent of the demand group were fully breast-fed. It was concluded that self-demand breast-feeding had a favorable effect on the establishment and maintenance of lactation.

THE MILBANK MEMORIAL FUND QUARTERLY

Volume 30, April, 1952

* An experiment in diet education during pregnancy. K. Berry and D. G. Wiehl.—p. 119.

Diet Education during Pregnancy. Patients at a prenatal clinic were selected for a nutrition study to (a) determine whether, with instruction, those on very low incomes would change their dietary patterns, and (b) evaluate whether the quality of their diets would have a demonstrable relationship to complications or outcome of pregnancy. Alternate patients were given dietary instruction while the control group remained uninstructed. Through interviews, records were obtained from both groups of the food eaten the previous day or on a recent day when a normal diet was followed. Estimated weekly consumption of milk, eggs, and servings of good sources of ascorbic acid were tabulated. Dietary histories at the final interview did not indicate that the instructed patients, as a group, had significantly better diets than the control patients, as a group. The instructed patients, however, had a slightly greater proportion of "good" diets. In estimating the effect of diet on the outcome of pregnancy, the evaluation was made from the histories of the combined groups, those with good diets showing less prematurity and preeclampsia.

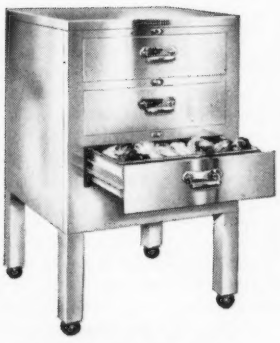
THE NEW ENGLAND JOURNAL OF MEDICINE

Vol. 246, April 17, 1952

* The combined effect of cortisone and partial protein depletion on wound healing. C. W. Findley and E. L. Howes.—p. 597.

Specially cooked foods are kept constant in weight, color, and flavor...

HERE'S HOW PRESBYTERIAN HOSPITAL DOES IT!



3-DRAWER MODEL 3DL
$353.00

Other two, three, and four-drawer models from $188.00 to $400.00.

FOODS EXPOSED TO THE AIR dry out, lose color. Those stored in uncontrolled moisture become soggy, lack appetite appeal. To solve this problem in its Quantitative Kitchen, the Presbyterian Hospital of Chicago installed the "Toastmaster" Roll and Food Warmer.

CONSTANT TEMPERATURE AND HUMIDITY are now maintained. Cooked vegetables that have been previously weighed retain their fresh flavor, color, and texture. Roasted meats are also kept more appetizing and palatable.

THERE'S AN INCREASE in serving speed and a saving in steps as well. The quantitative trays are made up and served from one central location. In their preparation, the trays are wheeled up to the "Toastmaster" Roll and Food Warmer where the weighed foods are added. Then, they are sent to the floors for serving.

CLEANLINESS AND SANITATION ARE MADE EASY with the stainless steel drawers and exterior finish. A plug-in-appliance, it can be put to use immediately wherever needed. In service at the Presbyterian Hospital about two years, this "Toastmaster" Roll and Food Warmer has never required any maintenance of any kind.

YOUR FOOD SERVICE EQUIPMENT DEALER will be glad to show you all the advantages of the "Toastmaster"* Roll and Food Warmer. Call him about it, now.

TOASTMASTER
Roll and Food Warmers

*"TOASTMASTER" is a registered trademark of McGraw Electric Company, makers of "Toastmaster" Toasters, "Toastmaster" Waffle Bakers, "Toastmaster" Roll and Food Warmers, and other "Toastmaster" Products. Copr. 1952, TOASTMASTER PRODUCTS DIVISION, McGraw Electric Company, Elgin, Ill.

Wound Healing. In rabbits it was necessary to cause more than 20 per cent weight loss by starvation and protein depletion to retard the initial appearance and growth of granulations in the healing wound. The healing of wounds in animals partially depleted of protein and losing less than 20 per cent of weight was retarded by low doses of cortisone when a low-protein diet was given after wounding. In other words, debility and inadequate intake of protein augmented the retarding action of cortisone on wound healing. On the contrary, healing was not retarded when a normal diet was given after operation. This may partially explain the conflicting reports on wound healing in the presence of cortisone and ACTH. The mortality was greater in wounded animals receiving cortisone after being depleted on a low-protein and starvation regimen than when cortisone was not given. The influence of starvation and low-protein diets on healing is discussed.

NUTRITION ABSTRACTS AND REVIEWS

Vol. 21, January, 1952

The metabolism of fat in the mammary gland and foetal tissues, with reference to the application of isotopic tracers. G. Popjak.—p. 535.

NUTRITION REVIEWS

Vol. 10, May, 1952

* Metabolism of water and electrolytes in patients with liver disease.—p. 130.
* Amino acid imbalance.—p. 135.
* Obesity.—p. 138.
* Nutrition and susceptibility to tuberculosis.—p. 141.
* Riboflavin requirements in pregnancy.—p. 142.
* Interconversion among nonessential amino acids.—p. 152.
* Fat in nutrition.—p. 154.
* Prevention of hemorrhage by rutin.—p. 156.
* Food intake and nocturnal diuresis in sprue.—p. 156.

Metabolism of Water. In several studies of the water metabolism of patients with cirrhosis of the liver no diminution of urine output was observed as a result of low-sodium diets. This suggests that an antidiuretic principle found in urine was not acting on water retention but on sodium retention. Nocturnal diuresis of water and sodium in cirrhosis and also in congestive heart failure was studied, showing that patients with these conditions displayed great variation in sodium, potassium, and creatinine excretion. The cause for failure to excrete administered sodium in almost all cases must await further explanation and research.

Amino Acid Imbalance. Weanling male rats were fed various experimental diets for five weeks in a study of the amino acid imbalances that result from the addition of various amino acids to a casein-gelatin diet. The criterion for determining the effect of diet alterations was growth depression or evidence of niacin deficiency. A severe tryptophan deficiency was produced by the addition of 6 per cent gelatin to a dextrin-basal diet at the expense of an equal amount of carbohydrate. Weight gain on this diet was severely curtailed, while a less drastic but still noticeable growth depression resulted from omitting cystine. The indication is that tryptophan deficiency is more severe in the presence of cystine. Other amino acid mixtures are enumerated which also produced growth depression. These tests emphasize the delicate balance between the amino acids and the ease with which drastic deficiencies can be induced by disturbing the balance.

Obesity. Obesity is usually not thought of as a form of malnutrition, yet it is one of the most prevalent manifestations of improper nutrition in this country and has many serious consequences. Not only does it shorten life, but evidence reveals that hypertension, cardiac disease, diabetes, and gall bladder disease are more common in the obese than in persons of normal weight. A re-evaluation of the term "malnutrition" is called for in the attack on obesity, which should be regarded as a major problem in public health and the concern of public health workers.

Nutrition and Tuberculosis. Some evidence has been uncovered as to the possible causative relation between a blood deficiency of ascorbic acid and vitamin A and the incidence of tuberculosis. A relatively stable, nontuberculous, but susceptible, population was observed for five years with respect to nutrition and the appearance of the disease. Although variations occurred in the tests given, all twenty-eight persons who developed pulmonary tuberculosis showed low plasma concentrations of the two vitamins.

Riboflavin in Pregnancy. Contrary to the belief that riboflavin requirements are not increased in pregnancy, it was found during periods of food restriction, resulting from the war, that pregnant women exhibited more frequent signs of riboflavin deficiency than did other members of the family groups on the same type of diet. The unfavorable effects of riboflavin deficiency in pregnancy and parturition are reported. To study the greater requirements for the vitamin during this period, a single fasting specimen of urine was analyzed twice a month during pregnancy and the first two months of the postpartum period in two groups of women. The group given a low level of riboflavin had a vitamin content in the urine similar to that of women who were not pregnant, with a decrease in riboflavin content during the last trimester. Although excretions of the vitamin were greater in the high-riboflavin group, a significant decrease was noted during the two months immediately postpartum which is interpreted as an increased requirement associated with lactation.

Nonessential Amino Acids. A purified diet adequate for growth, the nitrogen being provided by pure amino acids, one or more of which could be removed, was fed to weanling male rats. The purpose was to ascertain if biosynthesis continued, and at what speed, for three nonessential amino acids, glycine, serine, and cystine. Serine and glycine were demonstrated to be involved with choline formation. However, a low-choline diet, as compared with a ration deficient in choline and lacking in serine and glycine entirely, showed no difference in growth in the experimental animals. A low-choline diet, devoid of the three acids, also resulted in no valid difference in growth, but when the basal diet was adjusted to contain a minimum of methionine, a slight deficiency of threonine, and no choline, there was significant decrease in body weights. It appears that under extreme dietary adjustments, the organism is unable to synthesize the amino acids in question and they become limiting factors in growth.

Fat in Nutrition. There are many gaps in our knowledge of the effect of fat on general nutrition. Recently a report was made on the essential fatty acid content of margarines, shortenings, butters, and cotton seed oil as determined by two methods, spectrophotometric and biologic assay. In general, good agreement between the two methods was obtained. The growth rate in male rats, previously depleted of essential fatty acids, was generally superior with margarine feedings to that obtained with butter. In another study, a comparison of arachidonic and linoleic acids in furnishing essential fatty acids was made, with the result that the potency of the former was calculated to be approximately 6.2 times that of linoleic acid. Tests to determine the influence of dietary vitamin E on the response of fat-depleted rats to methyl linoleate showed striking contrasts in results, emphasizing that much data on the interrrelationships of fat-soluble factors in nutrition are still to be found.

Prevention of Hemorrhage. Five groups of dogs were used to determine the effect of rutin on hemorrhage. The substance, in the general class of flavones, is thought to have a beneficial effect upon capillary permeability and fragility and has been used to treat conditions in which capillary changes are prominent. The conclusion of the study was that rutin exerted some kind of nonspecific stabilizing effect on the ground substance of the dogs who received it both pre- and post-operatively, although the specific effect could not be interpreted.

Food Intake and Nocturnal Diuresis. The possible relation between food in the gastrointestinal tract and delayed diuresis in sprue was investigated because of the known absorption defect occurring with the disease. The hypothesis that water excretion is delayed by the retention of large amounts of fluid in the gastrointestinal tract was tested by administering fluid intravenously when the patient was in a fasting state and also following a meal. Diuresis took place immediately with fasting but was delayed when food had been administered. Similar results occurred when the fluid was administered orally. The investigation reemphasizes the role that food in the gastrointestinal tract has in influencing the function of other systems of the body.

MEAT... and the Cholesterol Content of the Diet

An essential constituent of human tissue, contributing to the normal functioning of all cells, cholesterol has been widely discussed as a factor in the etiology of atherosclerosis. Yet this lipid is required in many metabolic processes, and, furthermore, evidence is lacking that withholding cholesterol from the dietary is effective in preventing atherosclerosis.

In a recent plea for a return to the basic fundamentals of nutrition in the prophylaxis of atherosclerosis, it was emphasized that to eliminate cholesterol from the diet would mean to eliminate such animal foods as meat, milk, eggs, etc.* However, nutritionists are unanimous in asserting that these protective foods contain basic essential nutrients required for good nutrition and that to deny them would be "equivalent to the negation of practically all that nutrition science has taught us in the past."

According to these authors,* elimination of animal foods from the diet to prevent the development of atherosclerosis is unjustified on the basis of present day knowledge. They state that "there certainly is no evidence that meatless, milkless, and eggless diets should be recommended as desirable to the general public."

Meat, America's favorite protein food, always has been and continues to be an important dietary source of biologically complete protein, B vitamins, and iron. Few indeed are the conditions in which its use must be interdicted.

---

*Hegsted, D. M.; Mann, G. V., and Stare, F. J.: Comments on Cholesterol, Editorial, Postgrad. Med. *11*:454 (May) 1952.*

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute
Main Office, Chicago... Members Throughout the United States

AMERICAN RESTAURANT MAGAZINE

Vol. 36, May, 1952

* Quick tricks for delicious desserts with ice cream. J. A. Cline.—p. 114.
* A cafeteria with 32 years of experience. C. E. Wright.—p. 124.

Ice Cream Desserts. Ice cream's colorful past and flavorful present are briefly traced. Once the exclusive delight of kings and noblemen, the delicacy came to America in 1700, started "selling" commercially in 1851, and began mass production about twenty years ago. Today 540 million gal. comprise the output of the popular dessert which Charles I of England wished to be guarded as a royal secret. Vanilla is the flavor of nearly half of all ice cream sold; chocolate accounts for another fourth; and strawberry makes up nearly 10 per cent of total sales. Cherry vanilla, a new flavor, holds fourth place. In addition, there are more than two hundred other flavors. Even small restaurants are urged to stock three or four of the most popular flavors, as well as an assortment of toppings. Numerous suggestions and recipes are given, and a wider use of ice creams and sherbets is pointed out as a good way to offer a wider dessert choice without extra work in the kitchen.

"Built-In" Experience. Thirty-two years of experience form the cornerstone of a new Florida cafeteria, largest and newest of a southern chain. An over-all control system governs every phase of the business; however, each branch is separately incorporated and "on its own" as to its own profit or loss. Success of these cafeterias is helped by several features not common to all self-service restaurants: seating is spacious and uncrowded; semi-abstract art and murals adorn panels and walls; and waiters are quick to carry customer trays from counter to table. Food preparation rooms, on the second floor, are constructed of tile, with stainless steel equipment. Dishwashing operations are discussed, as are other phases of control. Large inventories are unneeded because purchasing and portion control are carefully watched. Daily checks are made on expenses. All recipes are standardized, and eye-appeal and astute placing of food tempts customers to purchase salads and desserts. Also, the chain frequently employs the "loss leader" technique to attract customers. Personnel training is thorough and involves procedures such as teaching the new waitress that the percentage of the customer's dollar which goes to the owner is less than her share from tips. Prospective supervisors enroll in a management training course the company instituted three years ago.

COLLEGE AND UNIVERSITY BUSINESS

Vol. 12, May, 1952

* Students get opportunity to "talk about" at campus cafeteria. S. Wilson.—p. 51.

Customers' Ideas Welcomed. A one-sheet good-will bulletin is passed out at the campus cafeteria of the University of California, Berkeley, whenever the food service department has something to say. Students who also have something to say may write their views in a special suggestion section of the sheet. Most of the comments, it is reported, convey neither praise nor blame but are simple, intelligent requests for slight changes which will improve the service and help student morale. Signed suggestions are answered by letter and occasionally the authors are given a tour of the food service department. Students react to the suggestions on the bulletin amazingly well; a request that they bus their own dishes resulted in only forty trays left after two thousand meals.

FOOD ENGINEERING

Vol. 24, April, 1952

* Dairy-field trends.—p. 80.

Vol. 24, May, 1952

Meter simplifies color grading of fruits and vegetables. N. W. Desrosier, F. C. Gaylord, W. F. Kellie, and N. K. Ellis.—p. 92.
* Optional "chemical" additives. T. Bellis.—p. 98.
* Antioxidants. . .provide new flavor controls. A. V. Gemmill.—p. 102.
* Food emulsifiers. . .bring new highs in uniformity. I. Four types evaluated. C. D. Pratt and W. W. Hays.—p. 109. II. Glycerides bridge gap. E. S. Pattison.—p. 112.
* Seaweed extractives. . .find versatile uses in foods. L. S. Stoloff.—p. 114.

What's Ahead for the Dairy Industry? The trends, as the author sees them, are: fewer cows; shifts in dairying locales; drops in milk and cream consumption; a smaller number of plants; greater sales through stores; a rise in vending-machine sales; standardization of sanitary rules; wider interest in low-fat foods; more substitute products; a switch to higher-quality butter; centralization of operations; a swing to continuous processing; automatic packing of products; tank-truck pick-up from farms; and better labor relations.

Optional "Chemical" Additives. Food standards prepared by the Food and Drug Administration contain extensive information pertaining to the use of "chemicals" in foods. Familiar foods used as optional ingredients, such as milk, cream, butter, sugar, and so forth, are not discussed in this article in order to give major consideration to chemical agents. Most optional ingredients allowed in food standards for the purpose of modification of taste can be classed as familiar products. However, some, such as monosodium glutamate and vanillin, are not so categorized. Functions of "chemicals" in foods may be: to increase acidity (vinegar and citric acid are examples), to improve appearance (bleaching agents and chlorophyll protectors), to produce firmness (vegetable gums and emulsifying salts), and to preserve food (sodium benzoate and benzoic acid). This article is intended as a review to save time and trouble in determining permissible uses of special agents. However, the editors note, approval of an additive for one food cannot be construed automatically as license to use it in another, although it does mean that the additive is not toxic in the amounts allowed. A reference list of food classes for which standards have been set is presented.

Antioxidants Provide Flavor Controls. Oxidative rancidity, the prevention of which is of great economic importance in fat-containing foods, can be delayed by special care on the part of the food processor. Measures that can be taken include: proper choice of raw materials, prevention of contamination with metals, and assurance of proper packaging. However, greater stability than can be obtained in this way is often necessary. Antioxidants vary in their effectiveness in different fats, e.g., tocopherols stabilize animal fats, but not vegetable fats—and certain acids work in the opposite way. Storage also affects antioxidants. Other considerations are: color, flavor, and odor imparted; solubility; cost and availability; and toxicity. Provisions of the Food, Drug, and Cosmetic Act state that any antioxidant must be declared on the label of a food, and that it must either be non-toxic or its level of safety must be established and tolerance limits set by open hearings of the Federal Security Commission. Federally approved materials, such as gum guaiac, lecithin, citric and phosphoric acids, and tocopherols are briefly described. Tables indicate the stability of various amounts of different antioxidants in lard and in cottonseed oil. Spices as well as these chemical agents have antioxidant properties; rosemary and sage have by far the highest antioxidant indices—17.6 and 15.4 respectively. Antioxidants play other roles, preventing oxidative rancidity in crackers and prepared baking mixes. They can also be used in deep-fried products and can protect foods when used in wax or parchment wrappings for meats, shortenings, and other fatty foods.

Food Emulsifiers. Eating quality, appetizing nature, and attractive appearance of many foods can be improved with the use of emulsifiers. These agents help to distribute oil-soluble ingredients homogeneously throughout a product in fine particles. This is accomplished through their affinity for both fat and water. Four groups of partial ester emulsifiers are listed, and their use in bakery products, fats and oils, dairy products, confectionery products, and other foods is described. The second article deals with mono- and diglycerides, effective due to the presence of both fat- and water-soluble groups within their structure. They were first used in shortening in 1933, but monoglycerides had been employed in making margarine even earlier. Bread Standards Hearings of the Food and Drug Administration have included discussion of the glycerides in bread, and now limitations are reasonably broad with regard to their use. Accompanying these articles is a table showing the functions of specific emulsifiers in various foods.

Seaweed Extractives. Refined hydrocolloids extracted from seaweeds are being used as stabilizing liquid and semi-solid foods. Most types are free-

AGE	NO. SUBJECTS EXAMINED	NO. WITH SCURVY	% WITH SCURVY	NO. WHITE SUBJECTS	NO. WITH SCURVY	NO. NEGRO SUBJECTS	NO. WITH SCURVY
0–15 da.	360	0	0	174	0	186	0
16–30 da.	90	1	—	41	1	49	0
1 mo.	99	0	0	48	0	51	0
2 mo.	90	2	2.2	34	2	56	0
3 mo.	69	3	4.3	31	3	38	0
4 mo.	79	2	2.5	26	1	53	1
5 mo.	73	12	16.5	25	3	48	9
6 mo.	53	13	24.5	19	5	34	8
7 mo.	54	10	18.5	22	7	32	3
8 mo.	40	5	12.5	18	2	22	3
9 mo.	38	10	26.3	12	4	26	6
10 mo.	41	5	12.2	16	0	25	5
11 mo.	40	3	7.5	12	0	28	3
12–23 mo.	177	3	—	68	1	109	2
Total	1303	69		546	29	757	40

PREVALENCE OF SCURVY

SCURVY

is more common than many think

Histological examination* of bone structure in 1300 infant post mortems revealed that scurvy occurred more than 10 times as frequently as is usually shown by clinical diagnosis. The most susceptible age is from the fifth through the eleventh month, with approximately 17% of infants exhibiting the histological signs. Over half of the children with scurvy had never received supplemental vitamin C. How easy to prevent, when Florida citrus is so rich in vitamin C content — so convenient, so economical, and so pleasant to take!

** Bull. Johns Hopkins Hosp. 87:569, 1950.*

FLORIDA CITRUS COMMISSION • LAKELAND, FLORIDA

FLORIDA *Citrus*

ORANGES • GRAPEFRUIT • TANGERINES

flowing flaky powders, light amber to colorless, with odor and flavor slight or entirely absent. Solutions of these extractives almost always increase viscosity, proving useful in obtaining uniform consistencies in food products as well as giving "body" to soups, sirups, and fountain drinks. These solutions have a stabilizing action on emulsions, suspensions, and foams, making them useful in sauces, flavoring emulsions, dressings, meringues, and whipped cream. Standardized for specific use, seaweed extractives are generally known as suitable for jelling, binding, thickening, suspending, and precipitating as well as stabilizing and "bodying." Refined moss extractives aid in the protection of frozen fatty fish against rancidity.

FORECAST FOR HOME ECONOMISTS

Vol. 68, May, 1952

* Ninth graders dine out. M. Carlson.—p. 16.
Have a cup of good coffee. E. Saltonstall.—p. 17.
* Spring tonic for school lunches. M. Farnam.—p 26.

Ninth Graders Dine Out. Home economics students in the ninth grade learned by practice the mechanics of graceful dining-out. Three weeks were spent on class activities and practicing, and the final test was an actual meal in a local hotel. Subsequently, a field trip was taken to the hotel kitchen, and the supervisor explained to the students how waitresses were trained and meals planned and suggested opportunities open to home economics students who specialize in institution management.

Spring Tonic for School Lunches. Recipes, menus, and miscellaneous suggestions are given for "pepping up" school meals in the spring. Ideas are suitable for use by advanced home economics students and are slanted for appeal to teen-age tastes.

HOSPITAL MANAGEMENT

Vol. 73, April, 1952

* Restaurant man gives tips on food service efficiency. W. J. Slagle.—p. 98.

Tips on Food Service Efficiency. The following tips on operating an efficient food service are given. Labor must be watched closely for competition is high. Maintenance of equipment must at times be foreseen to cut down on expenses. In menu planning, one should be original, versatile, and not afraid to try color and contrast. To control cost, everything received should be weighed; the cooked and uncooked product should be checked for results; monthly inventories should be made; and portion scales, patty papers, and portion cups should be used.

HOSPITALS

Vol. 26, May, 1952

* Airline-type mobile units for complete centralized service. G. O. Lindgren.—p. 97.

Airline Style Food Service. Centralized tray service was carried a step farther at Trinity Lutheran Hospital in Kansas City, Missouri, by use of mobile cart with specially built units to hold trays with cold food and compartments for hot food and liquids. From this cart, trays are assembled and served to the patient. All food is prepared in one place under direct supervision of the dietitian, resulting in less handling of each food item. Food is kept hot without drying out or deterioration. Formal communication from the nursing service to the dietitian is very important, since the dietitian is away from the floor. Illustrations are included.

HOTEL MANAGEMENT

Vol. 61, April, 1952

* Slip proofing ends falls. R. Davenport.—p. 51.
* Pork. P. P. Logan.—p. 60.

Slip Proofing Ends Falls. A "safety spree" by the manager of a Minneapolis hotel resulted in non-slip surfacing in every location where a guest or employee might slip or fall. An adhesive tread was applied in food and beverage service corridors, in frying areas, around sinks and tubs, and in every bathtub in the hotel. No accidents due to slipping have been reported since the "spree" was begun.

Pork. The author tells how hogs, our quickest source of red meat, are processed and describes the major market cuts, how pork is cured, and how the by-products are utilized. He also mentions many new canned pork items developed by the armed forces which may become useful for restaurant operators.

THE HOTEL MONTHLY

Vol. 60, May, 1952

* Pastry products go modern. R. Preschley.—p. 51.

Modern Pastries. Deep-fried dumplings and turnovers, both the meat and the fruit varieties, are an easily-prepared, appetizing dish, and nonproductive lull periods in the kitchen can be used for preparing them. Improvements both in hydrogenated vegetable fats and deep-fat frying equipment have helped to increase the popularity of this type of cooking. The "40% formula," i.e., 40 per cent shortening based on the weight of the flour, works best for French-fried dumplings and turnovers. These dishes provide an excellent way to use up leftover cooked meats, poultry, and fish, and the pastry may be considered a meat extender. Recipes for the basic pie crust and two types of fillings, with preparation and serving instructions, are included as are suggestions on refrigeration, portioning, and frying.

INSTITUTIONS MAGAZINE

Vol. 30, May, 1952

* Low operational pulse? Try doses of cost control. D. E. Lundberg and V. V. Kane.—p. 1.
Need uniform designation of food quality. W. H. Haskell.—p. 3.
* On-the-job meetings keep workers posted.—p. 26.
Deep fat frying done to a turnover.—p. 100.
* Unravel mystery, complex science of food poisoning.—p. 126.
* List easily executed steps to ward off food service hazards.—p. 168.

Food Cost Control. Food cost "measures the heartbeat" of a mass feeding operation and is the figure which, along with labor cost, defines the quality of internal management. Food cost is also an index of efficiency to many procedures in the institution. Percentage food cost may range from 20 to 50 per cent, depending on the individual situation. The "right" food cost can be determined only after the operator has considered the variable factors. Facets of purchasing are discussed: quality, comparative testing of canned foods, buying carcass meat vs. individual cuts, purveyor relations, and quantity. Receiving and issuing procedures and storage of fruits and vegetables are also considered, as well as methods of figuring food cost.

On-the-Job Meetings. Food service employees in a Milwaukee cafeteria receive refresher classes in the form of staff meetings. Roundtables give individual workers an opportunity to review, criticize, and make suggestions about their jobs, and their co-workers have an opportunity to offer ideas for improvement which occur to them as they watch the others at work. Part of each session is devoted to demonstrations emphasizing human relations.

Food Poisoning. Bacteriology of food poisoning, as discussed in a recent lecture, is reported in relation to the various types of food poisoning organisms. These include Staphylococcus, Salmonella, Streptococcus (enterococcus), and Clostridium botulinum. Mere consumption of Staphylococci cells will not cause food poisoning; however, illness will result from consumption of the toxin produced by them. This toxin is resistant to boiling. Salmonella and Streptococcus poisoning are infections of the intestinal tract rather than intoxications. Clostridium botulinum, for which botulism was named, produces a toxin which is the most potent poison known, but which can be destroyed by 10-min. boiling. Because this organism grows in the absence of air, home-canned foods are the most dangerous source of this poisoning, particularly green vegetables canned by the cold-pack method. Commercially canned foods have not resulted in a case of food poisoning, however, since 1925. Experiments are now being conducted to isolate the enterotoxin produced by Staphylococci. Foods usually responsible for outbreaks of Staph poisoning are meat products (mostly ham), bakery goods, poultry products, potatoes, and milk products.

Steps to Banish Food Service Hazards. U. S. Department of Commerce recommendations for avoiding accidents in mass feeding operations are given. Suggestions are made relating to the following activities in food production and serving: preparation, cooking and baking, serving, and cleaning tables and washing dishes, as well as miscellaneous hazards.

THE MODERN HOSPITAL

Vol. 78, May, 1952

* Good management *is* possible in food management. I. D. Robinson.—p. 112.

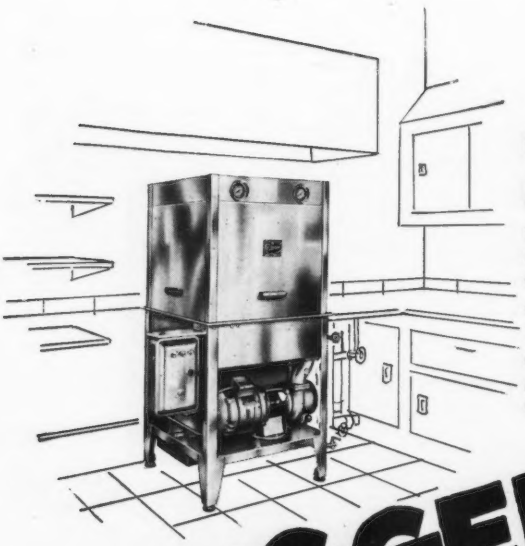
Midwest Food Service, Inc.
Continental Can Co. Cafeteria—Milwaukee

An inviting service

Sexton
Quality Foods

In the industrial cafeteria or restaurant, the emphasis is on *service*. It must be fast yet tasteful . . . as well as economical and efficient. Paper cups, plates and napery fit naturally into the picture . . . saving time, eliminating waste, yet always attractive. Sexton service on paper goods is designed to the special needs of the industrial user. The most complete assortment, together with speedy delivery from huge stocks, makes Sexton the logical source for paper goods of all kinds.

JOHN SEXTON & CO., CHICAGO, 1952



COLT
AUTOSAN
Dishwashing and Sanitizing Machine with Automatic Timer*
Capacity:
1250 Dishes Per Hour
Other Rack-Type Models:
900 Dishes Per Hour

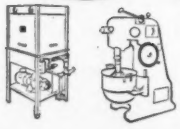
RUGGED
. . . to serve you longer!

There's more profit in every meal when you cut dishwashing costs with a COLT AUTOSAN. Model R-1AT is an ideal Dishwashing and Sanitizing Machine for the smaller or medium sized restaurant. A rugged, compact, rack-type design for straightaway or corner installation, it needs only 27 x 27 inches of floor space—yet washes and sanitizes 1250 dishes per hour.

Whether you serve hundreds or thousands of people a day, there's a COLT AUTOSAN that can pay off handsomely in your kitchen. Colt capacities run from 900 to 9000 dishes per hour. And Colt's specially engineered, rugged construction means more years of dependable, trouble-free service. Ask your dealer for full details, or write direct to Colt's Manufacturing Co., Hartford 15, Connecticut.

COLT AUTOMATIC TIMER
Gives predetermined control automatically — eliminates possibility of human error — assures adequate washing, thorough rinsing and complete sanitizing — conserves labor, water and detergent. All accomplished simply by the touch of the starter button. Automatic control is required by law in certain cities.

COLT AUTOSAN
DISHWASHING, SANITIZING AND DRYING MACHINES and FOOD MIXERS



*Model R1-A without Automatic Timer, available, at lower cost.

Good Food Management. Raw food expenditures were reduced by $5100 per month in the reorganization plan in which the author participated, yet just as many meals per month were served as before. The author notes that fortunately all four conditions were present which are fundamentally necessary to successful dietary department reorganization, i.e., (a) a new, well-laid-out and well-equipped department; (b) the cooperation of a capable and sympathetic director of nurses; (c) an able and experienced administrator who saw the wisdom of spending $1 to save $5; and (d) an enlightened board of trustees. Centralized service was chosen, with a straight-line flow of materials. Employee training was difficult, with low employee morale and labor shortage creating problems. Malcontents resisted change and at times even resorted to strikes. These workers, however, disappeared at a high rate of turnover and better employees remained and responded well to changes. The changes, particularly the new practice of paying in cash for all hours worked, in lieu of part payment in meals and ignoring of overtime, increased the payroll cost, but morale was raised. An employee training and operating manual was written, and a food cost control system was installed.

QUICK FROZEN FOODS

Vol. 14, March, 1952

* What the American housewife thinks of frozen foods.—p. 105.

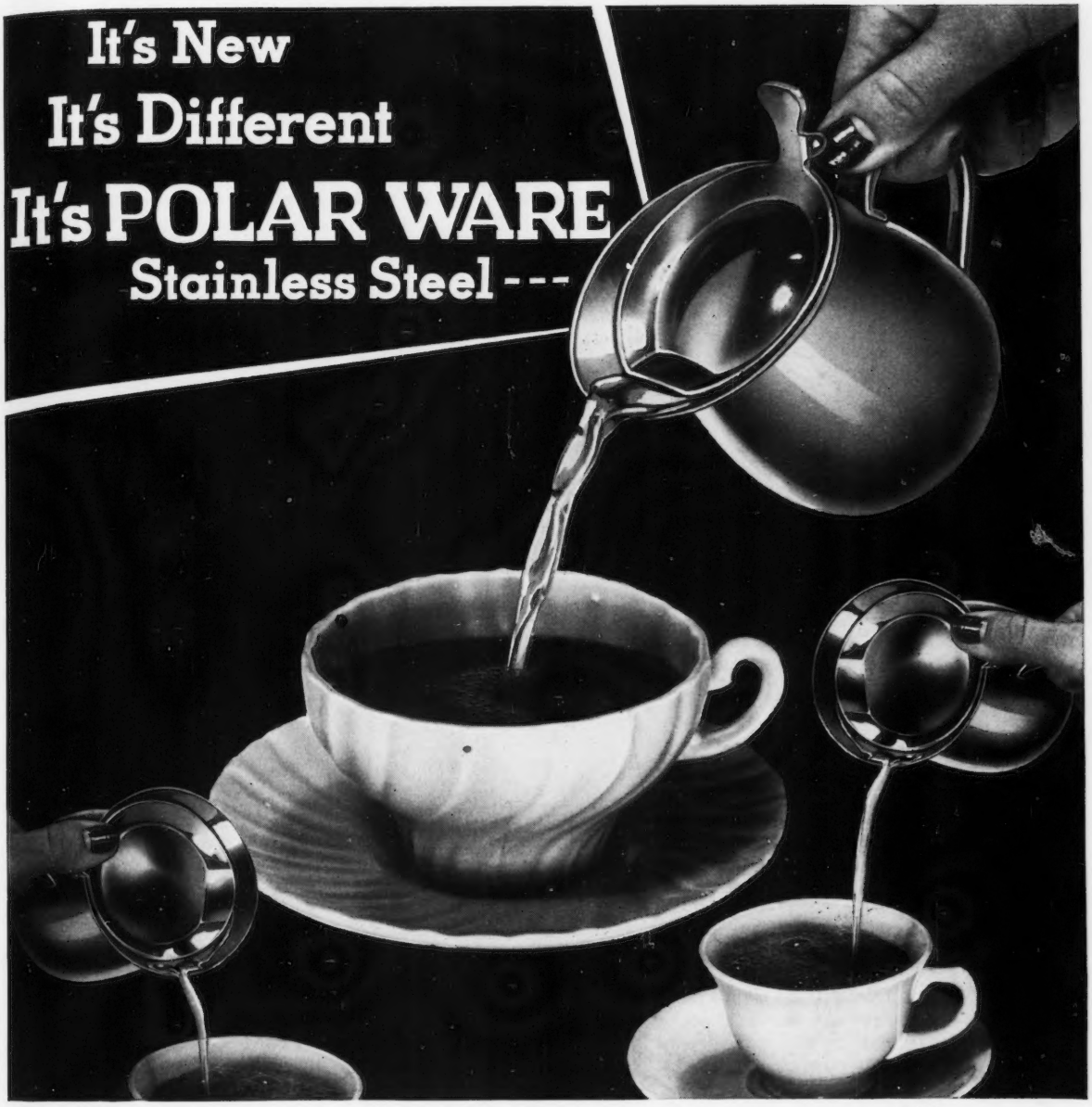
Poultry freezing—a dynamic and growing industry. C. Pollock.-p. 118.

Frozen fishery products set new, high record. M. Wheeler.—p. 119.

* Improving the quality of fruits for ice cream use. E. B. Struble.—p. 121.

Housewives and Frozen Foods. A survey in December 1951 showed an 11 per cent increase in the total frozen food market, largely due to the progress of frozen juice concentrates. Twice as many customers were complaining about high prices as in the previous (1949) survey, and some complained about the quantity of food in the packages. An increase in dissatisfaction with cooking instructions on packages was also reported. Figures on trying, buying, frequency of serving, food and brand preferences, reasons for nonuse, and B-grade product acceptance are correlated with various socioeconomic factors.

Freezing Fruits for Ice Cream. Methods and problems connected with freezing fruits for ice cream are discussed. The most practical method, the author states, is to mix the fruit thoroughly with dry sugar, even beyond the point where no undissolved sugar is apparent. The reason for further mixing is that greater penetration of the pulp by the sugar solids occurs, and hard pieces of pulp are also eliminated from the ice cream. Also, the more "intimate" the mixing between the sugar and berry solids, the more preserving action is received from the sugar. Poor mixing and poor proportioning, however, often occur with commercially frozen fruits. Avoidance of extraneous matter involves close



A Spoutless, Individual Beverage Server.

pours perfectly—from every angle.

There is much to be said for this attractive, new Polar Ware beverage server with the no-drip feature. Handled carefully or carelessly, it always pours perfectly — an advantage particularly appreciated by uncertain convalescents. And because this individual 10-ounce server has no spout, it makes trays less crowded and easier to load. What's more, washing is easier, too . . . for with no spout to contend with, the pot, with cover open, rides firmly on the tray or conveyor belt of your washing machine.

Ask the men who call on you about this new beverage server for the diet kitchen that's ruggedly made in one piece of heavy gauge stainless steel, with hinged cover. You'll find that leading supply houses everywhere carry Polar Ware.

Polar Ware Co. 4100 LAKE SHORE ROAD SHEBOYGAN, WISCONSIN

work with the packer, another important phase of the work often overlooked. Another difficulty in fruit freezing is too much water, often resulting from a drip from the inspection belt or elevator into the slicer or sugar mixer. Additional causes of poor quality stem from: varieties of fruit not adapted to freezing; greenness or overripeness; and incorrect cooking time and temperature.

RESTAURANT MANAGEMENT

Vol. 70, May, 1952

* Modern miracles with potatoes. P. P. Logan.—p. 53.

Miracles with Potatoes. White potatoes, the world's most valuable vegetable, are discussed as to history, production, distribution, and quality. They are the most important item in the diets of western Europe and Russia and are of great nutritional importance in North and South America. U. S. potato consumption, however, has gradually declined because (a) many people believe potatoes are fattening, and (b) much food that previously was scarce or expensive is now available and used instead of potatoes. Terms such as "mealy," "waxy," and "soft rot," used by the potato industry to describe quality, are defined, and methods for processing dehydrated potatoes and precooked quick-frozen French fries are briefly listed. A table lists seventeen of the most popular varieties and their characteristics. The varietal name, however, does not guarantee cooking quality because different parts of the country produce wide variations. As yet, no "all-purpose" potato has been found, nor has a positive way to predetermine cooking quality readily been devised. Hints, however, are given for determining potatoes which are good for mashing, baking, frying, and so forth.

WHAT'S NEW IN HOME ECONOMICS

Vol. 16, April, 1952

* Meat cuts for budget cuts.—p. 34.

Vol. 16, May, 1952

Questions and answers on broiling.—p. 29.

* Why fruits and vegetables in the diet?—p. 49.

Facts about fruit and vegetables for teaching.—p. 52.

* The home economist's part in a community breakfast program. L. Thomason.—p. 64.

Low-Cost Meat Cuts. Appetizing and nutritious low-cost cuts of beef, pork, lamb, and veal are listed, and ways to use them are described. These cuts are little used, and the average customer usually passes them by for the familiar—and more costly—cuts. The last part of the article deals with good judgment of meat quality. Points to look for include: federal grading and stamping, packer branding, and inspection stamps. Teachers can demonstrate these cuts to classes by making field trips through meat processing plants and by showing meat charts and actual cuts of meat in the classroom.

Fruits and Vegetables. Work needs to be done to encourage greater use of fruit and vegetables in family meals. Although increases have taken place in vegetable and processed-fruit consumption in this country since 1942, the present consumption of vegetables should be doubled and that of tomatoes and citrus fruit increased by at least 70 per cent, if all Americans are to have an adequate diet. Nutritive content of fruits and vegetables is discussed. The article is followed by two pages containing tables of suggestions for preparing fruit and vegetables.

Teaching Better Breakfast Habits. Home economics teachers must be leaders in promoting consumption of better breakfasts. Recognition of the nation's need for better nutrition—of which breakfast is an important part—will not only improve eating habits but will win new friends for home economics as it adds to the national welfare. Following the article is a "blueprint" for a better breakfast program.

FAO and WHO Raise World Nutritional Levels

Malnutrition is preventable. The scientific principles and practices by which nutritional health can be produced and maintained are known. However, these facts have not been disseminated to all the peoples of the world. The application of this knowledge is further limited by traditional but improper dietary practices, by qualitative deficiencies in available food, and unfortunately in some countries, by insufficient quantities of food.

Two international organizations, the World Health Organization and the Food and Agriculture Organization, have recognized these facts and the programs of each have the common objective of raising levels of nutrition throughout the world, but programs must be tailored for each nation according to the nature of its nutritional problems and to the many factors which may be producing the problems.

To advise and assist in attacking this complex situation, a joint WHO/FAO Expert Committee on Nutrition was convened in 1949 and 1951. Ten members are appointed, five by each organization, to provide the highest technical competence and to obtain geographic representation.

The programs of FAO and WHO are administered separately but coordinated closely both internationally and regionally. The joint Expert Committee also assists and advises in coordinating and in delineating the activities of the two organizations. In FAO programs, emphasis is on the production, distribution, and consumption of food, while in WHO it is on nutrition in relation to the maintenance of health and the prevention of disease. The FAO program, which is somewhat older than that of WHO, can point to many outstanding accomplishments. Internationally accepted data on world food consumption, calorie requirements, nutrition facts for educational purposes, and approved techniques for dietary surveys have been published and have found wide use. WHO has focused on studies of nutritional deficiency diseases, such as kwashiorkor, endemic goiter, problems of infant feeding, and on methods for the determination of nutritional status. Internationally acceptable standardized methods for the latter purpose are being prepared by the committee. Both FAO and WHO have provided fellowships for training in nutrition and have provided expert consultants and direct technical assistance to member governments. They have conducted workshop training courses and can take much credit for instituting or improving nutrition services in many governments.

Much remains to be done. Agreement on internationally accepted dietary standards, methods of determining nutritional status which will permit comparison of one country with another, and simple methods for determining the prevalence of deficiency diseases will do much to lay a solid basis for international improvement in nutritional health.—*Excerpted from: Hundley, J. M.: Nutrition. Public Health Reports 67: 366 (April), 1952.*

NEW BREADING MIX

SAVES YOU TIME AND TROUBLE ...MAKES FRIED FOODS TASTIER!

NOW you can cross off another fussy, time-consuming job from your kitchen schedule—and give your customers more delicious breaded foods than ever!

Now, to bread fish, shellfish, poultry and meats for deep-fat or pan frying, simply roll them in Pillsbury's Min-It-Dip Mix—a complete, ready-to-use breading that includes milk, eggs and seasoning.

TRY MIN-IT-DIP MIX UNDER OUR MONEY-BACK GUARANTEE!

See for yourself how this *quality* breading mix simplifies your kitchen operations and improves your breaded foods. Ask your Pillsbury salesman or your jobber about a trial order—at *our* risk! Available in 5#, 25#, and 100# bags.

Pillsbury's MIN-IT-DIP MIX

Quality Breading—Ready to Use

HERE'S WHY MIN-IT-DIP WILL PLEASE YOU:

- Nothing to prepare, measure, or mix!
- Always ready for instant use!
- No refrigeration needed!
- Economical! One pound, costing under 20c, breads 10 pounds of fried foods. (Bread crumbs or cracker meal don't go nearly so far.)
- Low fat absorption cuts frying costs!

HERE'S WHY MIN-IT-DIP WILL PLEASE YOUR PATRONS:

- Foods breaded with Min-It-Dip *look* appetizing!
- Min-It-Dip breading is light—delicately crisp—less greasy!
- Because of its fine ingredients and careful seasoning, Min-It-Dip imparts unusually satisfying flavor to your fried foods.

PILLSBURY MILLS, Inc.
General Offices: Minneapolis 2, Minn.

News Notes

A.D.A. Officers for 1952-53. The following will be the elected officers of The American Dietetic Association for the coming year:

PRESIDENT—Beulah Hunzicker, Presbyterian Hospital, Chicago

PRESIDENT - ELECT—Grace Bulman, Chief, Dietetic Division, Veterans Administration, Washington, D. C.

SPEAKER OF THE HOUSE OF DELEGATES—Lucille M. Refshauge, Hartford Hospital, Hartford, Connecticut

SPEAKER-ELECT OF THE HOUSE OF DELEGATES—E. Neige Todhunter, Ph.D., University of Alabama, Tuscaloosa

TREASURER—LeVelle Wood, The Ohio State University, Columbus

SECRETARY—Esther A. Atkinson, The Pennsylvania State College, State College

DELEGATES-AT-LARGE

Helen E. Walsh, California Department of Health, San Francisco—1953

A. June Bricker, Metropolitan Life Insurance Company, New York City—1953

Bessie Brooks West, Kansas State College, Manhattan—1954

Elizabeth Perry, City Hospital, Cleveland—1954

Lillian Storms Coover, Ph.D., Nutrition Consultant, Gerber Products Company, Ames, Iowa—1955

Fern W. Gleiser, University of Chicago—1955

NOMINATING COMMITTEE

Geographical Section I—Helen Baughman, Peter Bent Brigham Hospital, Boston

Geographical Section II—Anna M. Tracy, Florida State University, Tallahassee

Geographical Section III—Wilma F. Robinson, Illinois Department of Public Health, Springfield

Geographical Section IV—Winifred Howard Erickson, Ancker Hospital, St. Paul

Geographical Section V—Louise Esch, Stanford University Hospitals, San Francisco

Maj. Lovett to Head Army Dietitians. Maj. Hilda M. Lovett, WMSC, has been named Assistant Chief, Women's Medical Specialist Corps and Chief of the Corps' Dietitian Section. Maj. Lovett, who will assume her new duties July 21 and be promoted to the rank of Lieutenant Colonel, will succeed Lt. Col. Eleanor L. Mitchell, WMSC. Col. Mitchell, who became the second Chief of the Dietitian Section in 1948, will assume Maj. Lovett's present position—Chief, Food Service Division, Walter Reed Army Hospital, Washington, D. C.

WHO News. Eightieth and newest member of the World Health Organization is the United Kingdom of Libya, which was admitted to WHO in a plenary meeting of the World Health Assembly in May. Dr. W. Grave-Morris, Director-General of Health of Libya, pointed out that poverty and lack of education have hampered all developments in his country and that the health situation was typified by high infant mortality, eye diseases, and deficiency diseases. He added that there is not yet one native Libyan doctor.

Nutrition Foundation Meeting. Industry's interest in social and health advancement is constantly increasing, stated George A. Sloan, President, Nutrition Foundation, Inc., at the spring meeting of the Foundation. "Dramatic results in the area of health, which have been achieved by Nutrition Foundation grants, are one evidence of industry in action as a social force." The Nutrition Foundation has made grants during 1951–52 totaling $322,950 to twenty-seven colleges and universities. and on May 1 additional grants totaling $165,000 for basic research in nutrition were made. These grants include research projects dealing with inositol; the effects of reducing diets on body composition, physiologic function, and cholesterol metabolism; and the influence of vitamin E on the metabolism of pyruvate and the nucleic acids.

Dr. Charles Glen King, Scientific Director of the Foundation, pointed out that four of the five leading causes of death in the U. S. today can be fought with good food. However, he warned that still-existing gaps in basic, reliable nutritional information are a serious handicap to the best use of food, despite the strides in nutritional research in the past decade.

Career Work Conference. Seattle dietitians were hostesses on May 1, 2, and 3 for a work conference to which college juniors in home economics from the University of Idaho, State College of Washington, and the University of Washington were invited. Guests were welcomed in the evening on May 1, at which time Mary Northrop, Chief Dietitian and Housekeeper, King County Hospital, explained the plan of the conference. On the following day, each visitor donned a white uniform and followed a dietetic intern on her regular working assignment, either at King County Hospital or Swedish Hospital. In the evening a discussion in which the visiting students, dietetic interns, and staff dietitians participated was led by Miss Northrop. For the last day of the conference, the visitors were taken on tours of the hospitals which participated, and the program closed with a tea.

Catholic Hospital Convention. The Catholic Hospital Association held its annual convention in Cleveland, May 26 through 29. "Improving Dietary Service" was the theme of the dietetic portion of the program. Clare Jacobsmeyer, St. John's Hospital, St. Louis, discussed "Organizing for Better Service for the Patient," and Sister Mary Ethel Shaughnessy, Our Lady of Mercy Hospital, Mariemont, Ohio, spoke on "The Function of the Dietitian in the Small Hospital." Elizabeth Perry, Cleveland City Hospital, served as consultant for this session.

At this meeting A.D.A. presented a new exhibit, which had been specially planned and designed to help hospital administrators. Clara Zempel, Professional Activities Director, attended the convention as A.D.A.'s official representative and helped to man the booth along with local dietitians.

Sisters at A.D.A. Convention. Housing arrangements have been made with St. Mary's Hospital in Minneapolis and St. Joseph's Hospital in St. Paul for Sisters who plan to attend A.D.A.'s Annual Meeting in the Twin Cities in October. Requests for rooms may be addressed to Sister Ann Noel, Director of Dietetics, St. Mary's Hospital, and to Sister Rose Alma, Director of Dietetics, St. Joseph's Hospital.

Interns Graduate. Six dietetic interns graduated in June from the Aetna Life Insurance Company administrative internship in Hartford, Connecticut. The girls are: Myla Beames, Miami University; Laurine Lundell, University of British Columbia; Roberta Mann, University of Connecticut; Inge Nachum, University of Maine; Doris Stilwell, Cornell University; and Kerry Walters, Kansas State College.

Government Publication. The fifth in the series on *Recipes for Quantity Service* has been released by the Bureau of Human Nutrition and Home Economics, U. S. D. A., as PA-197 (Food Service V). The twelve recipes are for quantities of 25, 50, and 100 portions. The collection includes Navy bean soup, barbecued hamburgers, ham turnover, liver loaf, turkey roll, carrots in sweet sauce, onion puff, jellied beet salad, red cabbage-avocado salad, cranberry upside-down cake, cranberry whip, peach tapioca, and prune cake. Portion sizes in each instance are given. A wide range of costs is represented in these recipes, so that some are suitable for institutions on limited budgets. Copies may be obtained from the Bureau, Washington 25.

Teaching Diabetics. An idea which proved popular was carried out by Vesta Davis, St. Catherine's Hospital, Omaha. She conducted a cooking school for diabetic persons in conjunction with a meet-

PREFERRED for ICE WATER SERVICE

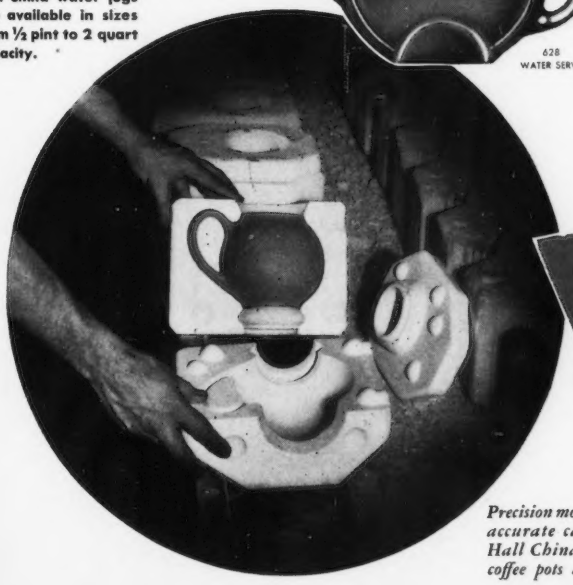
Hall China water jugs are available in sizes from ½ pint to 2 quart capacity.

Hall China water jugs are available in a wide variety of shapes for service in every type of institution. They are made of heavy, absorption-proof china by an exclusive process—which gives them extra strength and sturdiness to stand hard use . . . and a smooth surface which can be kept sparkling with a minimum of cleaning and sterilizing.

Write on company letterhead for Catalog 48, which lists almost 1,000 different Hall China items and contains a color chart of the 26 beautiful underglaze colors that are available.

THE HALL CHINA COMPANY • EAST LIVERPOOL, OHIO

The World's Largest Manufacturer of Fireproof Cooking China



Precision molds assure accurate casting of Hall China teapots, coffee pots and jugs.

HALL
Secret Process
FIREPROOF CHINA

ing of the lay group of the West-Central Diabetes Association. Her theme was appropriately called "Adding Glamour to Diabetic Diets." Food models were used for all food groups. She gave additional interest with trays containing "free foods" and trays of food garnishes and seasonings which could be used. Along with the demonstration, she distributed recipes, sample menus, and foods.

New Low-Cost Therapeutic Diets. The Welfare Council of Chicago has released a revision of its mimeographed "Low Cost Therapeutic Diets." The following twelve low-cost dietary plans are included: normal, pregnancy, lactation, high-calorie, high-vitamin, high-protein, bland low-residue, high-residue, ulcer, sodium restricted, low-fat, low-calorie, and diabetic. The normal diet is based on the Recommended Dietary Allowances for the physically active man and the moderately active woman, and the therapeutic diets have been planned as adaptations from the normal diet. The diet for diabetic patients is based on the exchange plan of A.D.A., the American Diabetes Association, and the Diabetes Branch, U. S. Public Health Service, and planned for a 1500-calorie level. A description of the survey used in establishing this level for the diabetic diet will appear in the August issue of the JOURNAL. The diets were worked out by a committee of nutritionists and dietitians from private and public agencies and welfare groups. Copies may be obtained for 40 cents each from Health Division, Welfare Council of Metropolitan Chicago, 123 West Madison Street, Chicago 2.

Monograph on Kwashiorkor. The World Health Organization has recently released *Kwashiorkor in Africa* by J. F. Brock and M. Autret. In it, the authors report the results of a survey in central and tropical Africa.

Although the syndrome cannot at present be precisely defined, the authors suggest the following tentative definition: a nutritional syndrome (or syndromes) found among indigenous Africans in which characteristically there occurs retarded growth in the late breast-feeding, weaning, and post-weaning phases; alterations in skin and hair pigmentation; edema; fatty infiltration, cellular necrosis, or fibrosis of the liver; heavy mortality in the absence of proper dietary treatment; and frequent, though not invariable, association of a variety of dermatoses. If the above definition is accepted, kwashiorkor was encountered in every region of Africa surveyed, i.e., the whole tropical belt between Zanzibar and Dakar, as well as in Egypt and the Union of South Africa.

There are, however, great differences in the incidence of the syndrome, differences which the authors correlate with variations in the normal diet of the African tribes. A high incidence occurs among races which subsist largely on such staple foods as cassava, plantains, yams, and maize, which are deficient both quantitatively and qualitatively in protein. On the other hand, races which consume reasonable quantities of animal protein are partially or even sometimes wholly free from the syndrome; and consumption of vegetable protein, such as beans, peas, and ground-nuts, also has a protective action.

The highest incidence of the syndrome occurs among infants and young children, because a child's protein requirement is at its highest during the first four years of life, whereas under present African conditions it is during that period that protein intake is likely to be the lowest. Deficiency of certain amino acids, particularly methionine, may be a basic causative factor.

Long-term measures of prevention suggested by the authors include: encouragement to increase the production of protective foods, especially fish, to replace or supplement the present low-protein staple foods by pulse or cereals, and to store food throughout the year to lessen the effect of the hungry months; education, particularly of mothers, in better dietary practices; and the development of a demonstration area where preventive measures may be introduced.

The booklet is obtainable as No. 8 of the World Health Organization Monograph Series from International Documents Service, Columbia University Press, 2960 Broadway, New York 27. The price is $1. It is available also in a French edition and has, in addition, been released by the Food and Agriculture Organization as No. 8 in the FAO Nutritional Studies Series.

Variety in special-diet menus can now be achieved easily—and tastily—thanks to SUCARYL, the non-caloric sweetener that can be used in all cooking and preserving processes. Keeps its full, sugar-like sweetness, even when boiled vigorously. And with SUCARYL, there's no bitter aftertaste in ordinary use. Cuts calories for reducers, yet satisfies sweet-tooth demands. SUCARYL Sodium Tablets, in bottles of 100 and 1000; SUCARYL Sweetening Solution, sodium or calcium form, in 4-fluidounce bottles. At leading pharmacies. Abbott

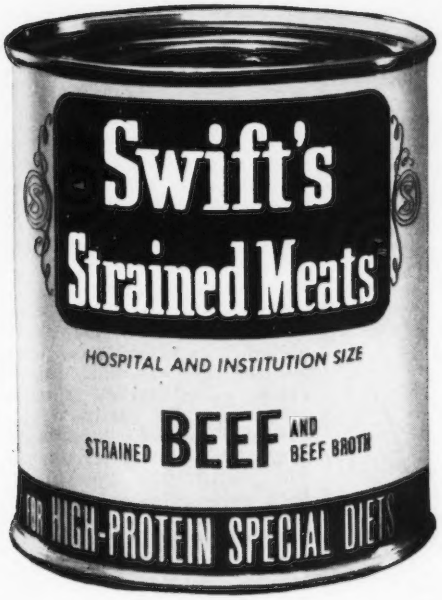
FREE
RECIPE BOOKLET

You'll want to try the tempting SUCARYL-sweetened recipes contained in the 32-page booklet, "Calorie Saving Recipes." To obtain a free copy, see your druggist or write Abbott Laboratories, North Chicago, Illinois.

SUCARYL® (CYCLAMATE, ABBOTT)

Non-Caloric Sweetener for Sugar-Restricted Diets

Easy, palatable way to add protein to special diets



New economical 12-ounce size

7 VARIETIES

BEEF • LAMB • PORK • VEAL • LIVER
HEART • LIVER AND BACON

Doctors recommend–

Swift's Strained Meats, just like the original Swift's Meats for Babies. They are an excellent source of biologically valuable proteins, B vitamins, and food iron—and they are low in fat content.

Patients appreciate–

Palatable Swift's Strained Meats, when they need a high-protein, soft diet—such as in geriatrics feeding, ulcer management, pre- and post-operative care.

Nurses welcome–

Swift's Strained Meats in hospitals, nursing or convalescent homes, and other institutions, because these meats are so convenient to serve. The individual particles are strained fine enough even for tube feeding!

Chefs cut costs–

With Swift's Strained Meats, because these meats are expertly prepared and ready to serve. And the new economical *12-ounce* size saves time, and cuts labor costs even further in the special diet kitchen.

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

All nutritional statements in this advertisement accepted by the Council on Foods and Nutrition of the American Medical Association.

SWIFT & COMPANY

Send for free booklet

Swift & Company
Dept. RL2, Chicago 9, Illinois

☐ Send me free booklet on uses and costs of Swift's Strained Meats in the new 12-ounce institutional size.

☐ Your representative may call on me.

Name _____

Hospital or Institution _____

Address _____

City _____ *Zone* _____ *State* _____

Lillian C. Williams. Word has been received of the death of Lillian C. Williams in Washington, D. C. Mrs. Williams had been a member of the Association since 1926 and had held positions with Hillman Hospital, Birmingham, Alabama; the State Training and Agricultural School in Nashville, Tennessee; Grace Hospital, Cleveland; and Doctors Hospital, Washington.

Food Schedule Should Suit Needs. Three meals a day may be a good old American custom, U.S.D.A. nutritionists say, but it is not necessarily the best eating schedule. Elderly people and others often feel better if more and smaller meals are served, and growing children, active workers, and underweight persons often benefit by a light between-meal snack, because they require more food than they can comfortably eat at one sitting. However, older people who eat frequently are warned against two hazards: (a) "filling up" on toast and tea or cake and coffee, which reduces the appetite for milk, fruit, vegetables, and other necessary foods; and (b) overeating with consequent overweight.

News of State Associations

Alabama Dietetic Association. The Alabama Dietetic Association held its spring meeting in Tuscaloosa, April 25 and 26.

Dr. Polly Ayers, Director, Jefferson County Bureau of Dental Health, demonstrated methods of teaching nutrition used by her staff, and Dr. E. Neige Todhunter, University of Alabama, reported on the survey of needs for dietitians which she made in Alabama hospitals. Following this report, groups met simultaneously to discuss food cost, employee time schedules, problems of the small hospital, and nutrition research.

Anna Irvine, the first dietitian to take charge of food service in any college in Alabama and soon to retire from the staff at Alabama College, Montevallo, was honored at the luncheon. Also at the luncehon, Dr. Ollie L. Backus, Director, University of Alabama Speech and Hearing Clinic, explained the work being done at the Clinic. LeVelle Wood, A.D.A. Treasurer, was the official representative.

JOURNAL subscriptions were awarded, as is the Alabama Association's annual custom, to three outstanding seniors in home economics in Alabama colleges.

The Alabama Dietetic Association is planning a fall meeting cooperatively with the Alabama Home Economics Association.

Arkansas Dietetic Association. Members of the Arkansas Dietetic Association held their annual meeting May 5 and 6 in Hot Springs. Rosa Maeri, Diabetes Control Unit, U. S. Public Health Service, Dallas, spoke on "The New Diabetic Diet," and an informal discussion on problems concerned with modified diets was held. Marguerite L. Pettee, official A.D.A. representative, talked on "The Dietitian Views the Patients," and discussed Association affairs. Graham Wright, Extension Community Activities Specialist, Little Rock, spoke on "What Makes a Group 'Tick'?" Isabel Hamilton and dietary staff, VA Hospital, Little Rock, presented "Eye Appeal Menu Planning," a talk illustrated by slides. The National Dairy Council film "Weight Reduction through Diet" also was shown.

California Dietetic Association. Sacramento was convention headquarters for the California Dietetic Association, which held its annual meeting May 21 through 24. The program included:

"Mental Hygiene Program of the State of California"—Dr. Frank F. Tallman, California Department of Mental Hygiene

"A.D.A. House of Delegates and Its Organization"—Dr. Helen L. Gillum, Speaker of the A.D.A. House of Delegates

"The Dietitian and Her National Professional Organization"—Dr. Margaret A. Ohlson, A.D.A. President

"Food Technology Looks at Food"—Dr. Emil Mrak, University of California, Davis

"Nutrition in the Atomic Age"—Dr. Max Klieber, University of California, Davis

"School Lunch Program of the City of Los Angeles"—Dorothy Springer, Los Angeles School Lunch Program

SAVORY SPEEDS SERVICE BECAUSE IT'S SELF-UNLOADING!

You could serve a mile-high stack of toast made the Savory way, yet never cause a toast bottleneck! The toaster is always ready for loading because its continuously moving conveyor unloads automatically, thus speeding up service of crisp, delicious toast – without fuss or bother.

Lowest Operating Cost

A Savory has the lowest operating cost in the commercial toasting field. Gas models operate on any type of gas, for as little as ¾ of a cent per hour. All-electric units have low connected load and comparably low operating costs.

"Ask your gas company for Proof of Profits through the use of modern equipment."

Savory EQUIPMENT, INCORPORATED
128 Pacific Street, Newark 5, N. J.
Sold by Leading Dealers Everywhere

"Over 50% reduction in replacement costs due entirely to the use of dinnerware molded of

MELMAC® PLASTIC"

—reports the well known Hubbard House chain

Mr. Ronald K. Jetmore, vice president of Hubbard House, Inc., enthusiastically endorses Restraware, molded of MELMAC, *by Applied Plastics Division of Keystone Brass Works.*

"As you know," says Mr. R. K. Jetmore, vice president of the famous Hubbard House chain, "we keep a very accurate record of replacement costs, and we find that dinnerware molded of MELMAC, by itself, has reduced our tableware replacement costs by over 50% . . . a substantial item, as every restaurant man is agreed.

"After some two years we are even more sold on it than we were originally. It is well accepted by our customers, and we are especially pleased because its quietness eliminates much of the dish noise prevalent in counter service and dishwashing machines."

This is just *one* of many enthusiastic endorsements of dinnerware molded of MELMAC plastic. And it's one more reason why it will pay you, too, to insist that your supplier give you full details about MELMAC plastic tableware.

AMERICAN *Cyanamid* COMPANY

PLASTICS DEPARTMENT

30-57 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

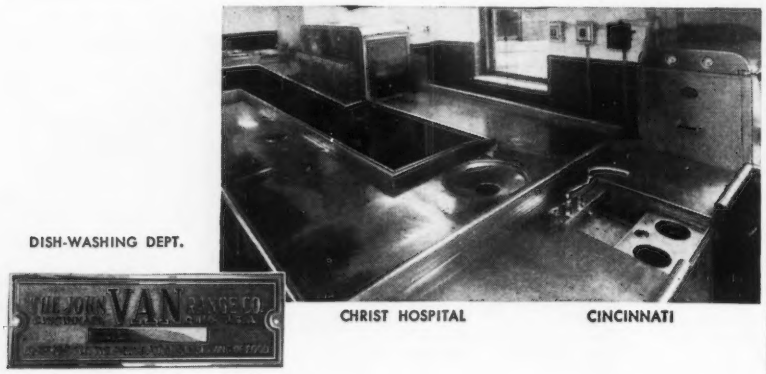
In Canada: North American Cyanamid Limited, Royal Bank Building, Toronto, Ontario, Canada.

"Supervision and Training of Employees"—Mildred Barnard, City College, San Francisco
"Application of Time and Motion Studies"—Catherine Starr, Sacramento State College
"Stress Nutrition"—Cmdr. Nello Pace, U. S. Naval Research

The *Central Valley Section* of the California Dietetic Association in January heard Grace Finnegan, California Department of Public Health, speak on the organizational set-up of the Nutrition Service and its major function as an advisory and consultation service to the professional staff of the state and local health departments. Nutrition Service pamphlets prepared in response to California's need for illustrative and teaching material were distributed. There was also a brief discussion of child care for transient agricultural workers' families.

The *San Jose Section* held its January meeting in Redwood City, with students from San Jose College and Sequoia High School as guests. Grayce Austin, San Mateo Community Hospital, discussed "Good Public Relations in Hospitals," and Max Gerfen, Administrator, Sequoia Hospital, spoke from the administrator's viewpoint about the dietitian's functions.

The *Santa Barbara Section* is currently co-sponsoring a series of forum lectures on nutrition and health with the Santa Barbara County Medical Association.



something old • something new in canny hospital improvement

• Not only are the workers more comfortable in the dish-washing department at Christ Hospital, Cincinnati, since the modernization . . . the director of dietetics and controller point with pride to the new high in sanitation and efficiency . . . *the improvement cost will be wiped out in three and a half years by savings in labor and dish-washing compound.*

• Although installed over 20 years ago, with a few modifications to fit the new model machines, the Van equipment is good for at least another 20 years or more, as the illustration depicts.

• Investigation might show *you* that replacements or modifications in your kitchen and service operations would improve efficiency, worker morale, *and pay for themselves.* Van would like to help you.

The John Van Range Co.
EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD
DIVISION OF THE EDWARDS MANUFACTURING CO.
Branches In Principal Cities
341 EGGLESTON AVENUE CINCINNATI 2, OHIO

Louisiana Dietetic Association. "The Dietitian Views the Field of Dietetics" was the theme of the Louisiana Dietetic Association's spring meeting, held in Alexandria May 8 and 9 in conjunction with the Louisiana Hospital Association and the Louisiana Association of Medical Records Librarians. Marguerite L. Pettee, A.D.A. Secretary, was the official representative. She spoke on "A.D.A. Highlights" and addressed the group on "Dietetics as a Profession," pointing out the value of a good dietitian to the hospital administrator. Margaret Stringfield, Supervisor of School Lunch Service, Little Rock, Arkansas, talked on the "Philosophy of School Feeding," and Barbara McDonald, Senior Nutrition Consultant, Arkansas State Board of Health, Little Rock, described "What Are Dietetic Consultants Doing?" Dr. Henry Wilson, Chief of Medicine, VA Hospital, Alexandria, discussed "Low Salt Diet in the Treatment of Heart Disease."

Massachusetts Dietetic Association. The Massachusetts Dietetic Association's annual meeting was held in Newton Lower Falls on May 2. Laura Cochran, John Robert Powers School of Poise and Grooming, addressed the group after the business meeting.

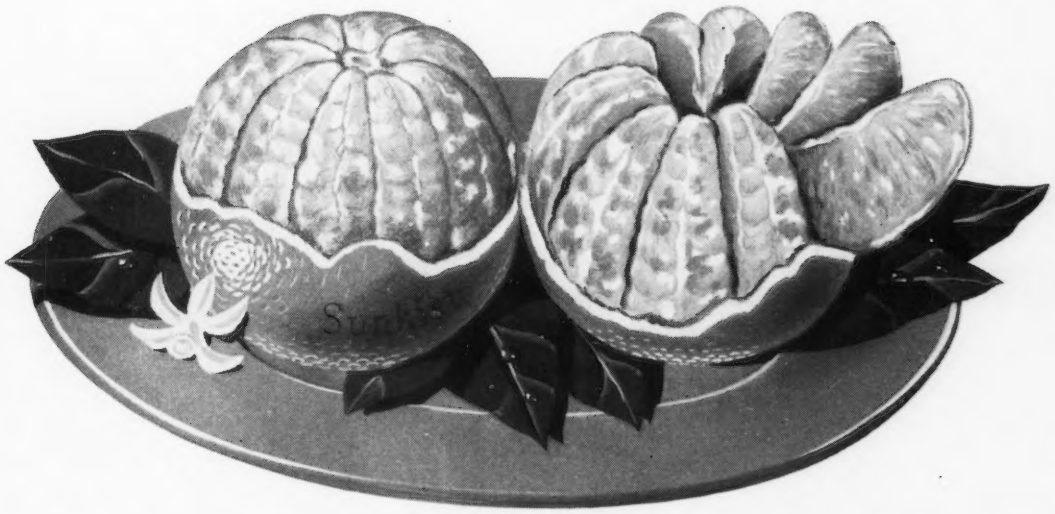
New Mexico Dietetic Association. *La Carta*, new quarterly bulletin of the New Mexico Dietetic Association, made its debut with the April 1952 issue. Volume 1, Number 1 was an eight-page duplicated issue with an attractive and typically "New Mexican" drawing of cactus and the desert on the cover.

Members of the New Mexico Dietetic Association held their spring meeting April 25 in Albuquerque. Margaret Cowden Bernard, Regional VA Dietetic Clinic, Denver, was guest speaker.

New York State Dietetic Association. The *Rochester Dietetic Association* recently co-sponsored with the Senior Girl Scout Planning Board a "Fun with Food Day." Other current projects of the Rochester Association include working with the Rochester Hospital Council in planning an institute for dietetic personnel and cooperating with the Rochester Health Bureau and the Monroe County Nutrition Committee in promoting better food service for nursing homes. A food service institute for nursing home managers on "Economical Quality Food Service" was held in March.

North Dakota Dietetic Association. Fargo was the site of the North Dakota Dietetic Association's seventh annual convention on May 19. Amy Erickson, Concordia College, Moorhead, Minnesota, spoke on "The Dietitian's Place in the College Cafeteria."

Officers of the North Dakota Dietetic Association for 1952–53 will be: President, Dorothy Ayers Loudon, North Dakota State College, Dickinson; President-Elect, Winifred L. Halvorsen, VA Hospital, Minot; Secretary, Grace Cole Gould, St. Luke's Hospital, Fargo; and



An Orange a Day for Better Nutrient Absorption

THE SIGNIFICANCE OF THE PROTOPECTINS

Human nutrition today means more than the mere ingestion of the chemical components of foodstuffs. While these nutrients—vitamins, minerals, proteins, fats, and carbohydrates—are needed to carry on metabolic life, food must also provide other substances required for normal functioning of many systems within the organism, particularly the gastrointestinal tract. Conversely, only in the optimally functioning digestive tract will released nutrients be absorbed to the greatest possible extent.

The Protopectins

Among such non-nutritive substances which aid in promoting better intestinal functioning are the protopectins, the subject of the present wide interest in complex carbohydrates.

Protopectins are the native form in which pectin occurs in certain fruits. California oranges supply generous amounts of these complex carbohydrates, which in the edible portion are contained in the fibrovascular bundles, the segmental walls, and the juice sacs; the juice contains comparatively little.

When the properly peeled fruit is eaten whole, the ingested protopectins—after conversion to pectin and subjection to enzymatic and bacterial action throughout the tract—yield substances largely responsible for their advantageous influence on the digestive processes, intestinal function and nutrient absorption.

Improved Absorption of Nutrients

By lowering intestinal pH and lessening intestinal fermentation and putrefaction, the protopectins create an environment conducive to more complete absorption of important nutrients supplied by the daily diet. In this manner, absorption of non-caloric nutrients such as vitamins and minerals is enhanced, ***without leading to weight gain.*** The influence of the protopectins, of value at every age, is especially beneficial in the later years of life.

Other Benefits

Because of their demulcent influence the protopectins counteract the effects of intestinal irritants, thus aiding in the prevention of diarrhea. Through their water-binding power they lead to the formation of desirable gelatinous bulk which stimulates peristalsis and tends to prevent constipation. By lowering the intestinal pH, the protopectins tend to inhibit the growth of putrefactive and otherwise undesirable microorganisms present in the intestine.

These beneficial effects are over and above, and entirely separate from, the multiple vitamin values of oranges. Oranges remain the best practical source of vitamin C. Sunkist Oranges are the finest of the crop of California, where sunshine, mineral-rich soil, and cool nights combine to produce oranges of the highest quality.

Sunkist Growers • Los Angeles, California

Sunkist®

California Oranges

FREE!

to all institutions...

• CATALOG

• TESTING SAMPLES

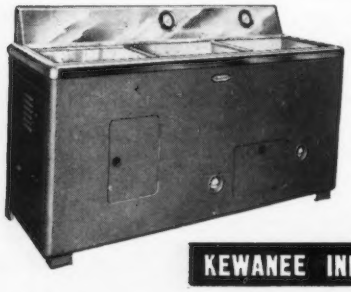
JUST drop us a note for your free copy of our catalog listing sizes and prices of the many famous—and unusual —items in the Hilker and Bletsch line, including Welsh Rarebit, Boysenberry Gelatine Dessert, etc. Always at your service—and famous for food specialties since 1891. *Testing samples gladly sent on request.* Remember —for *real* service from one convenient source— write for our free catalog today

HILKER & BLETSCH COMPANY

614 WEST HUBBARD STREET CHICAGO 10, ILLINOIS

KEWANEE replaces 4 EMPLOYEES in Michigan School

Armada Rural Agricultural School authorities, Armada, Michigan, replaced 4 hand dishwashers when their Kewanee was installed. Used in connection with the school lunch program, the Kewanee saves 2 man-hours of labor daily. The school serves more pupils with the same number of dishes and has reduced breakage from hand washing 10%. Mr. H. A. Kitson, Superintendent of Schools (*above with Mrs. Margie Ward, Lunch Manager*), writes, "We have found it a very good low priced dishwasher".



Complete Operation—only $396

(FOB Kewanee, Illinois and subject to change without notice). Satisfied restaurant, school and institution users throughout the nation! Washes and rinses—sanitizes over 3000 dishes per hour... also handles glasses, silver and utensils. Heats its own water—REQUIRES NO BOOSTER. Compact—requires only 11 sq. ft. floor space.

• ***Write for Complete Information.***

Ask also about the popular KEWANEE PRE-WASH.

KEWANEE INDUSTRIAL WASHER CORP. KEWANEE, ILLINOIS

Treasurer, Eleanor Wolfe Latterell, Halliday.

Ohio Dietetic Association. "Enlarging Our World" was the theme of the Ohio Dietetic Association's annual meeting in Akron, April 25 and 26. Speeches included in the program were:

"Are Europe's Problems Ours?"—Paul Frank, Station WHKC

"Home Economics Education in Germany"—Marie C. Doermann, Extension Service, Rutgers University, New Brunswick, New Jersey

"Let Frozen Foods Help You"—Olive Stouffer, International Harvester Company, Chicago

"Social Aspects of Enlarging Our World"—Dr. Paul L. McKay, First Presbyterian Church, Akron

"What's New in Plastics"—Harry Stevens, B. F. Goodrich Company, Brecksville, Ohio

"Starvation and Nutritional Rehabilitation: A Quantitative Case Study"—Dr. Josef Brožek, University of Minnesota, Minneapolis

"That We May Better Understand India"—Dr. and Mrs. Ernest Sinclair, Akron

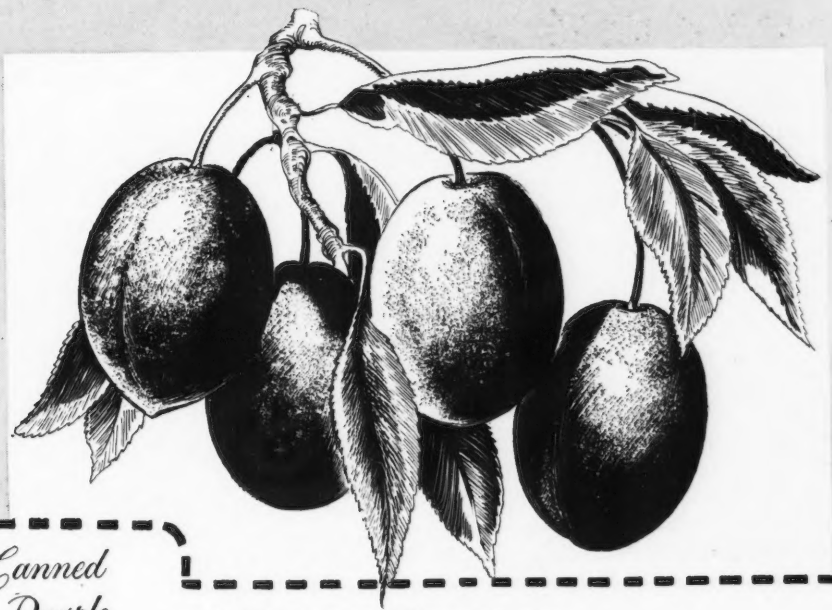
Sectional workshops were also held. The workshop in Community Nutrition included discussions of "Food Service Consultation and Nutrition Standards in Child Caring Institutions" and "Nutrition Education in the Schools." "The Soft Diet" was discussed at the Diet Therapy workshop. Subjects of the Food Administration workshop were: "Food Cost Control," "Use of Non-professional Workers," "Working with Medical and Administrative Staff," and "Patient Contacts." The Professional Education workshop dealt with the queries: "What Can the Representatives in Home Economics Offer to the Directors of Internships?" and "What Can the Directors of Internships Offer to the Heads of Home Economics Departments?"

Beulah Hunzicker, A.D.A. President-Elect, as the official representative discussed Association affairs.

Pennsylvania Dietetic Association. On April 8, the *Philadelphia Dietetic Association* heard Alexander M. MacNichol of Greenman, MacNichol and Company, New York City, speak on "Cost Finding and Distribution as Applied to Dietary Departments."

Mr. MacNichol's talk was largely in the nature of a warning to the dietitian that in this modern age of figures she must be able to justify the cost of operation in her department. This thought is becoming a guiding factor in the minds of trustees and administrators and there is much pressure to effect economies and to urge the dietitian to observe business procedures, to develop acceptable standards, to know business terminology, and to know how to handle figures. Mr. MacNichol also said that we as a group should realize that accounting tools are necessary armamentaria for successful wielding of facts. Among suggestions, he mentioned analysis of facts rather than arbitrary decisions; that the

For your food file—interesting facts on canned purple plums



Canned Purple Plums

Nutritive Values of 122 grams Serving

Nutrient	Quantity of Nutrient Per Serving	Approximate Percentage of Daily Recommended Allowance*	Approximate Percentage of Minimum Daily Requirement**
Carbohydrate (available) (1)	23 gm.	—	—
Fat (1)	0.17 gm.	—	—
Protein (1)	0.6 gm.	1	—
Caloric Value (1)	114 calories	4	—
Calcium (1)	9.8 mg.	1	1
Phosphorus (1)	16 mg.	—	2
Iron (1)	1.2 mg.	10	12
Vitamin A (2)	1500 I. U.	30	38
Thiamine (3, 6)	0.028 mg.	2	3
Riboflavin (4, 5)	0.024 mg.	1	1
Niacin (3, 5)	0.44 mg.	3	—
Vitamin C (2, 6)	2 mg.	3	7

*Percentage based on Recommended Daily Allowance for physically active man—National Research Council. **Percentage based on Minimum Daily Requirement for adult over 12 years of age—Food and Drug Administration.

1. Food Research 11, 391 (1946)
2. J. Nutrition 28, 107 (1944)
3. J. Nutrition 28, 117 (1944)
4. J. Nutrition 28, 123 (1944)
5. J. Am. Dietet. Assoc. 21, 357 (1945)
6. J. Am. Dietet. Assoc. 23, 226 (1947)

CANCO

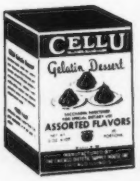
General Research Laboratory, American Can Co., Maywood, Illinois

If you would like free file cards bearing similar information on Tomatoes, Shrimp, Peas, Mushrooms and Carrots write to:

General Research Laboratory, American Can Co.
Maywood, Illinois

The Seal of Acceptance denotes that this advertisement has been reviewed by the Council on Foods and Nutrition of the American Medical Association and has been accepted by them.

American Can Co., *New York • Chicago • San Francisco • Hamilton, Canada*



Twenty Tasty Servings—
In Individual Envelopes

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

Sugar-Free Desserts—

FOR LOW CALORIE DIETS

Make colorful, sparkling desserts and salads with CELLU GELATIN DESSERT. *It's sugar-free!* Six refreshing flavors: true fruit Orange, Lemon and Lime; imitation Raspberry, Strawberry and Cherry. Convenient to use, because CELLU GELATIN DESSERT is packed in individual-serving envelopes.
All Flavors Available in Pound Sizes For Institutional Use.

CELLU LOW CALORIE *Dietary Foods*
CHICAGO DIETETIC SUPPLY HOUSE *Inc.*
1750 West Van Buren Street Chicago 12, Illinois

SEND FOR NEW FREE CATALOG

Hotel Reservations, Minneapolis

35th Annual Meeting, October 21-24, 1952

Please make your hotel reservations through: THE MINNEAPOLIS HOUSING BUREAU, 1750 HENNEPIN AVENUE, MINNEAPOLIS 3, MINNESOTA. The Minneapolis Housing Bureau will accept either this form or a letter containing equally specific information. You will receive confirmation of your reservation.

Name of Hotel and Address	Approx. Distance from Auditorium	Order of Choice
Hotel Curtis, 10th St. and 4th Ave. So.	2 blocks	....
Hotel Dyckman, 27 S. Sixth St.	9 blocks	....
Hotel Francis Drake, 10th St. and 5th Ave. So.	5 blocks	....
Hotel Leamington, 10th St. and 4th Ave. So.	2 blocks	....
Hotel Nicollet, Nicollet and Washington	13 blocks	....
Hotel Normandy, 405 S. 8th St.	6 blocks	....
Hotel Radisson, 45 S. 7th St. (Hdqrs.)	8 blocks	....
Hotel Sheridan, 1112 Marquette Ave.	2 blocks	....

☐ With single bed (for one person) (Very scarce, arrange for double occupancy if possible) ☐ With double bed (for two persons) ☐ With twin beds

NAME .....

ADDRESS .....

CITY AND STATE .....

ARRIVAL DATE ..... **DEPARTURE DATE** .....

.....
(Name of person who will share your accommodation)

selective menu can be lower costed than the house menu; that where there is no pay cafeteria, some type of meal ticket is indicated; that special meals and meetings should be recorded separately.

On May 20, the annual banquet was held at the Hotel Warwick. Dr. Althea Hottel, Dean of Women at the University of Pennsylvania, was speaker.

Texas Dietetic Association. The Texas Dietetic Association's annual convention was held in Fort Worth, April 18 and 19. The program included:

"The Army's Need for Dietitians"—Maj. Martha E. Moseman, WMSC
"Nutrition and Civilian Defense"—Capt. R. E. Dysart, Coordinator of Civil Defense, Fort Worth and Tarrant County
"Research on Cancer and Vitamins"—Dr. Howard H. Beard, Terrell Laboratories, Fort Worth
"Diabetic Camp at Gainesville"—Dr. J. Shirley Sweeney, Gainesville
"Insulin Shock Therapy"—Dr. Eugene W. Green, U.S.P.H.S. Hospital, Fort Worth
"Glamour and Food"—Margaret McDonald, Station WBAP-TV
"Personnel Efficiency"—Bill N. Newman, Fort Worth Public Schools
"Food Cost Accounting"—C. W. Horan, Colonial Cafeterias, Fort Worth

A cost analysis workshop was coordinated by Marguerite Ross, North Texas State Teachers College, Denton. Beulah Hunzicker, A.D.A. President-Elect, was the official representative.

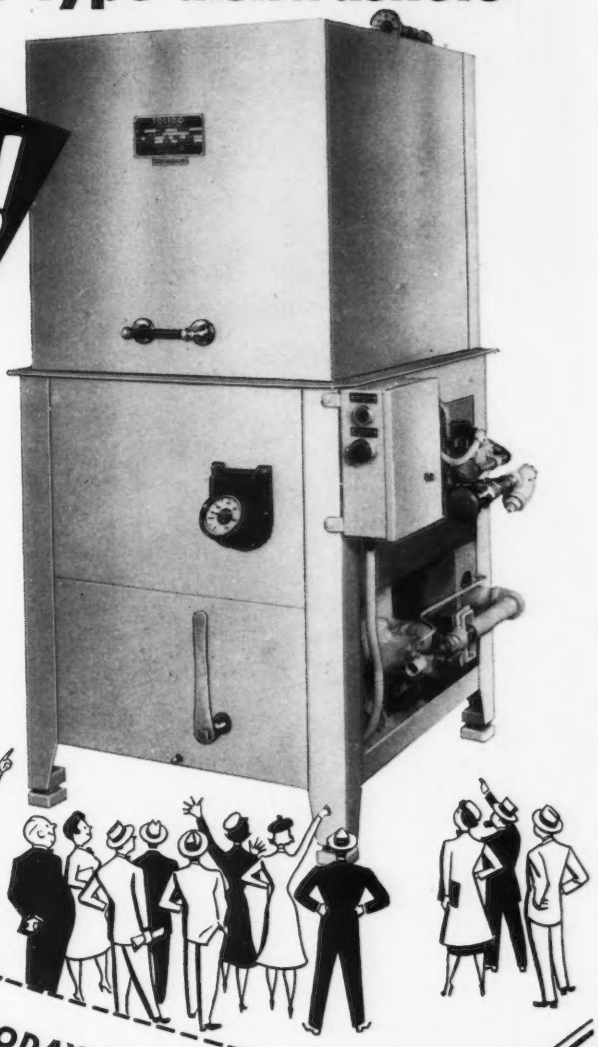
Virginia Dietetic Association. The Virginia, West Virginia, and North Carolina Dietetic Associations held a joint meeting with the annual conference of the Carolinas-Virginias Hospital Association in Roanoke on April 24 and 25. West Virginia was hostess for the meeting, for which "Improving Nutrition of Human Beings through Service" was the general theme.

"Why Civil Defense?" was the topic of Mrs. J. Blair Buck, Civil Defense Chairman of Virginia, Richmond. Evelyn Langston, Home Economist, Frigidaire, Dayton, Ohio, discussed "New Trends in Food Freezing," and Lex McGrath, Pfaelzer Brothers, Chicago, spoke on "Pre-Costing Menus by Use of Portion-Ready Meats." Dr. George P. Heffner, President, West Virginia Diabetic Association, told of the diabetic children's camp "Kno-Koma." A panel discussion on "Expanding the Community Nutrition Program" was participated in by Jean Smith Moody, Helen Ward, Margaret Bock Mitchell, and Mary Brice Deaver. Ruth M. Yakel, A.D.A. Executive Secretary, was the official representative and discussed Association affairs.

"Dietetics as a Career Week," observed throughout Virginia from April 13 to 20, was the principal activity of the Virginia Dietetic Association this spring. The state was divided into ten groups, with local chairmen planning radio broadcasts, talks, teas, newspaper publicity, and department store window exhibits.

NEW TOLEDO® door-type dishwashers

The Hit of the Show!



First displayed at the National Restaurant Show—these great new Toledos have earned enthusiastic acclaim.

Designed with Toledo-engineered new features to help you *save time . . . reduce costs.* In two sizes—and either timed-automatic or manual operation—both with new simplified electrical controls.

In the timed-automatic operation a touch of the starting button locks the door . . . flashes signal light . . . and the machine carries through a perfectly timed wash and rinse cycle automatically.

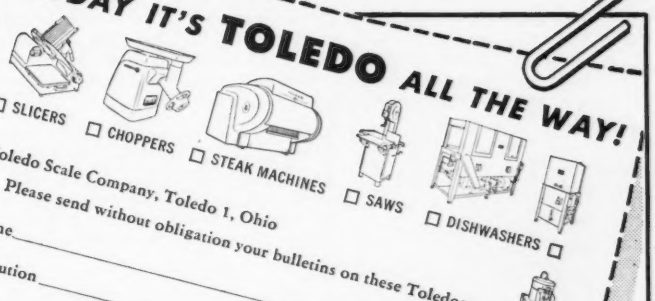
New 3-Way Door exposes three sides of machine at once . . . gives quiet easy operation . . . and new handsome clean-line appearance. These Toledos are available for straight-through, or corner installation. Models DS-27 and TA-27 (timed-automatic) handle 1350 dishes per hour; the DS-22 and TA-22 (timed-automatic) have a capacity of 850 dishes per hour.

it's NEW! it's FAST!

FOR PORTION CONTROL Toledo Speedweigh Over-Under Scales meet your needs for new speed with accuracy in portion weighing! Shadow-free wide-angle reading . . . sensitive to 1/64 of an ounce . . . stainless steel beam . . . enclosed levers . . . choice of platters and scoops. 5 lb. capacity.

TOLEDO SERVICE
Factory-trained . . . 200 cities

TODAY IT'S TOLEDO ALL THE WAY!



☐ SLICERS ☐ CHOPPERS ☐ STEAK MACHINES ☐ SAWS ☐ DISHWASHERS ☐ PEELERS ☐ SCALES

Toledo Scale Company, Toledo 1, Ohio

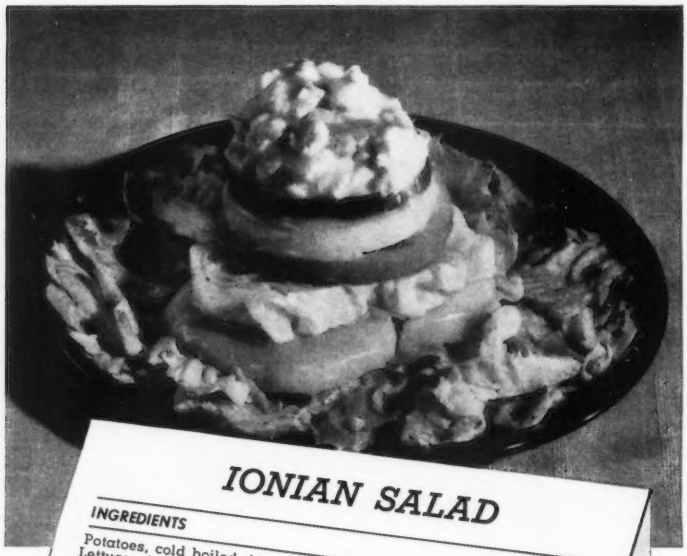
Please send without obligation your bulletins on these Toledos:

Name_____

Institution_____

Street_____

City_____ State_____



IONIAN SALAD

INGREDIENTS — 25 servings

Potatoes, cold boiled, ⅛ inch thick slices	50 slices
Lettuce, shredded	6 cups
Tomato	25 slices
Onions, raw (optional)	25 slices
Green Peppers	25 slices
Cottage Cheese	2½ cups
Continental French Dressing	3½ cups
Continental Oregano	

Marinate the slices of cold potato in Continental French Dressing, (1 cup for 50 slices), for two hours. On each individual salad plate place on a leaf of lettuce in the order mentioned, pyramid fashion: two slices of potato, ¼ cup shredded lettuce, 1 slice of tomato, 1 slice of raw onion (optional), 1 slice of green pepper, 1½ tablespoons of Cottage Cheese. Cover with 1½ tablespoons of Continental French Dressing, and sprinkle lightly with Continental Oregano.

Ingredient cost about 5c per serving

A New Salad...

From an Old World Recipe

Ionian is a *gourmet's* salad... yet it is easy to make, and it tastes as good as it looks—especially when made with Continental French Dressing. It's one of many low cost menu recipes now ready. Write for a complete free assortment. Continental French Dressing has a wonderful way with salads. It's always so zesty and colorful with its liberal spicing of choice imported paprika. And it needs no shaking before use because it is homogenized and stabilized—clings appetizingly to the salad. High in quality, low in price, it is one of the "76" flavor-tested Menu Products made in our own kitchens and delivered by the same salesman who delivers Continental Coffee. Overhead and delivery costs are thus cut to the bone to give you the best in values.

Constance Conover

P.S.—For other new Menu Ideas write today: *Constance Conover*, Director, quantity Recipes, Continental Coffee Co., 375 W. Ontario St., Chicago. Dept. G-5

Continental's "76"

"FLAVOR-TESTED" MENU PRODUCTS

CONTINENTAL COFFEE COMPANY

CHICAGO · TOLEDO · BROOKLYN

Producers of Continental Coffee • America's Leading Coffee for Restaurants, Hotels, and Institutions

Washington State Dietetic Association. In May, the Washington State Dietetic Association began a food service to small hospitals which will consist of duplicated letters mailed at intervals. The first Food Service Letter included a copy of the National Dairy Council's "A Guide to Good Eating"; menu ideas; ways to use left-overs; suggestions for economy measures, including portion control and the use of evaporated milk or nonfat dry milk solids; and two recipes. A charge of $2 annually is being made for this service.

The *Seattle Dietetic Association* sponsored the showing of the American Medical Association exhibit "Food Fads, Facts, and Fallacies," at the spring convention in Spokane, at the University of Washington Medical School, and also in downtown Seattle.

Three dietitians participated in a round table discussion on "Why I Like My Chosen Career" at the University of Washington Career Day.

Association Activities

A.D.A. Was Represented. Lida A. Jamison, as a member of the A.D.A. Council of the House of Delegates, attended the *Wisconsin Dietetic Association* meeting in Madison, April 18 and 19, representing the national Association.

Margaret Terrell represented A.D.A. at the annual meeting of the *Canadian Dietetic Association* held in Vancouver, British Columbia, June 10 to 13.

The *Defense Advisory Committee on Women in the Services* met in New York City in April to discuss recruitment as well as education for the armed services. Alta Atkinson attended this meeting as an alternate A.D.A. representative.

A meeting of the *National Conference of Nongovernmental Organizations on FAO* was held in Washington, D. C., on May 16. Helen Cahill was the A.D.A. representative attending. The main topics on the agenda were agrarian reform and technical assistance.

The *Medical College of Virginia* held its 115th commencement exercises, June 1 to 3. Kathryn W. Heitshu attended as the A.D.A. representative.

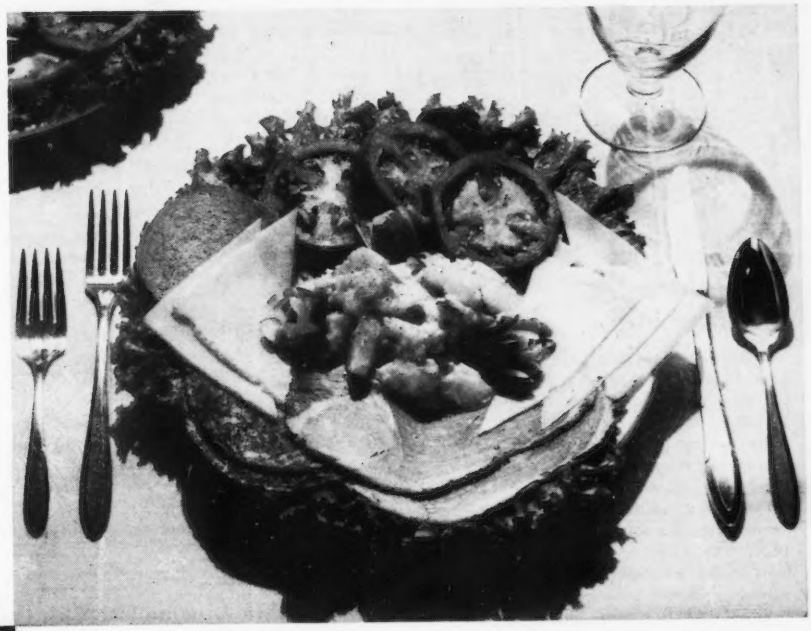
Clara Zempel, as the A.D.A. representative, attended an initial organization meeting of the *A.H.A. Committee on Prematurity*, in Washington, D. C., April 21.

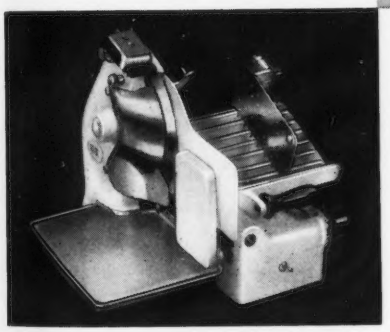
New A.H.E.A. Headquarters. The District of Columbia Dietetic Association represented A.D.A. at an open house of the American Home Economics Association at its new headquarters in Washington, D. C., May 16.

A.D.A. Exhibits. Approximately three thousand attended the General Federation of Women's Clubs International Homemakers Exposition held in Minneapolis, May 12 to 17. The joint A.M.A.-A.D.A. exhibit was manned by fourteen Minnesota dietitians with Lois Ragan in charge, and Clara Zempel as the A.D.A. representative. There were also staff members from the Public Rela-

"Please Summer Appetites with Profitable Cold Plates"

Prepared With This
U. S. MODEL
HC SLICER





● Quickly, with accurate portion control, even your inexperienced kitchen help can prepare attractive summer plates like this with this all-purpose food slicer. Precision slicing adds to the appetite appeal of food and makes portions *look* more generous. This results in impulse purchases which upgrade sandwich and salad customers.

Whether you are primarily interested in making profits for a restaurant or hotel or in controlling costs for an institution, this U. S. Slicer can be a big asset in your operation. And you can buy it now for the cost of a sandwich a day!

U.S. BERKEL

Best in the World of Food Machines

FOR STORY ON COST-CUTTING U. S. SLICING MACHINES... Clip and Mail

U.S. SLICING MACHINE CO., INC.
LaPorte, Indiana

U. S. SLICING MACHINE COMPANY, INC.
Berkel Bldg., LaPorte, Ind.

Send me complete information on U. S. Slicing Machines ☐. Also include literature on Meat Choppers ☐, Power Meat Saws ☐, Tendersteak® Machines ☐.

Name_____

Address_____

City_____ State_____

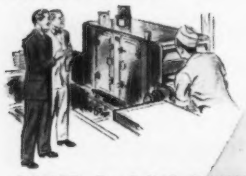
Du BOIS
K·O·L
Supreme

for excellence in machine dishwashing

K-O-L gives you *clean* glassware, *bright* silver, *sparkling white* dishes because it lets them rinse and dry without bacteria-breeding film and water droplets. And, because a dirty dishwashing machine can't possibly do a good job, it keeps the machine clean . . . Knocks-Out-Lime.

For perfect results, in any dishwashing machine, see Du Bois' ELECTRONIC CONTROL. With laboratory precision, it maintains exact solution strength, assuring cleaner tableware with greatest economy.

Combined with a better product Du Bois' superior service assures trouble-free dishwashing operation which easily meets the most rigid health department requirements. Glassware, silver and dishes not only are strictly sanitary, they look inviting, sparkling clean.



OTHER Du BOIS PRODUCTS FOR ENGINEERED SANITATION

- D-LITE . . . for no-film hand dishwashing.
- S-U-D-S . . . Super Sudser for pots and pans.
- ACTEX . . . For kitchen floors and refuse cans.
- TEMP . . . For tile, porcelain and metal.
- NEUTRALAVE . . . Safe, fast cleaner for fine composition floors.
- NEUTRA-GLOSS . . . Heavy-duty, skid-resistant floor wax.

WRITE FOR FULL DATA on any Du Bois Product, or for expert help on any sanitation problem. No obligation.

The Du Bois Company
CINCINNATI 3, OHIO • LOS ANGELES, CAL.

tions Department of the American Medical Association, and women from the Medical Auxiliary. The A.M.A. exhibit, "You Can Reduce," and the A.D.A. vocational guidance panel and career materials, as well as "Eating Is Fun," were displayed.

Nine Ohio dietitians, with Agnes Gill as chairman, together with Clara Zempel, manned the new A.D.A. exhibit at the Catholic Hospital Association meeting held in Cleveland, May 26 to 30. Approximately 3800 attended the convention. The exhibit describes for the administrators of small hospitals the services of the "shared" dietitian.

Members of the Chicago Dietetic Association, headed by Marie De Grief, were in charge of the A.D.A. exhibit for the annual meeting of the National Council of Social Work, held in Chicago, May 25 to 30. "Dietitians—Nutritionists Serve the Community" was shown. The "Youth Special Flyer" was distributed.

A.D.A. also exhibited in June at the A.M.A. meeting in Chicago and at the Biennial Nursing and American Home Economics Association conventions, both in Atlantic City.

Interest in the Profession. Recently *Mademoiselle*, *Charm*, and *Glamour* magazines have written our Public Relations Director for information concerning careers in dietetics, to be used in articles. In addition, a request for background material to be used in an informative career booklet was received from the Western Home Office of the Prudential Insurance Company of America.

News of Advertisers and Exhibitors

Pillsbury Mills, Inc., is currently promoting for summer the new ice cream parfait pie, which is being co-sponsored by Jello of *General Foods*. The filling of the pie is a combination of ice cream, fruit, and flavored Jello, the actual combination depending on the cook's choice. (The promotion says that there are a possible 300 combinations.) A pie shell, made with Pillsbury's Best Enriched Flour is used. In addition to the recipe for home use, the Bakery Division of Pillsbury has worked out a large-scale quantity recipe for the ice cream parfait pie which will provide sixteen 8-in. pies. Special features were carried in the June issue of several homemaking consumer magazines.

"Aura," the new machine-dishwashing compound offered by *Calgon, Inc.*, is a free-flowing, uniform, completely soluble white powder effective in all types of water. It has been found especially useful for plasticware and in removing coffee stains. It will be available in 100- and 300-lb. drums.

Edward Don & Company has added to its line a new "Kwik-Serv" cream dispenser, which serves right from the bottle. Any shape quart bottle fits in the chamber of the dispenser, thus keeping cream completely sealed-in until dispensed and eliminating transferring from bulk cans. The new device complies with the sanitary requirements of the milk code of the U. S. Public Health Service.

Army Announcements Concerning Dietetic Personnel

The following dietitians have received initial appointments in the Women's Medical Specialist Corps Reserve and are on active military duty:

Capt. Elinor Pearson, R-531
1st Lt. Phyllis L. Smith, R-2636
2nd Lt. Mary D. Argianas, R-2635
2nd Lt. Jean F. Dawson
2nd Lt. Mary A. Rechtien, R-2634
2nd Lt. Emmy Lou Riedle, R-20253

The following dietitians have been promoted:

First Lieutenants to Permanent Captain, Regular Army

Jeanne R. Bowdish, R-10121
Mildred E. Breimyer, R-10120
Betty P. Chellman, R-10116
Dorothy E. Fisher, R-10058
Rosamund E. Hughes, R-10129
Virginia L. Jones, R-10115
Ellen C. Miller, R-10094
Sophia N. Obuhanych, R-10127
Mary R. Preston, R-10109
Catherine M. Ruane, R-10119
Alice M. Strong, R-10133
Mary A. Tope, R-10126
Elizabeth V. Woodham, R-10108

Second Lieutenant to Temporary First Lieutenant

Willa J. Alie, R-2592
Mary L. Blundell, R-2594
Mary E. Cotter, R-2591
Louise G. Drozdiak, R-2581
Dorothy L. Jett, R-2566
Ruth E. Kabeiseman, R-2588
Josephine C. King, R-2580
Jula J. Kula, R-2590
Eleanor A. Love, R-2582
Ermenia J. Nesci, R-2584
Patricia A. Parker, R-2592
Mary C. Rankin, R-2373
Teresa Anne VanHulla, R-2596

Listed below are dietitians who have been separated from service:

Capt. Rebecca L. Burr, R-10098
Capt. Marion M. Petkoff, R-10060
Capt. Elizabeth J. Stevenson, R-2522
Capt. Jo[illegible]a R. Wargo, R-2512
1st Lt. Gloria R. Eberhardt, R-2573
1st Lt. Eileen L. Kelly, R-750
1st Lt. Opal I. Sams, R-20252
2nd Lt. Ruth S. Salera, R-2583